88 01229

Draft Environmental Impact Report

Draft 208 Plan

SOUTH COAST PLANNING AREA



INSTITUTE OF GOVERNMENTAL STUDIES LIBRARY
AUG 16 1984
UNIVERSITY OF CALIFORNIA

PREPARED FOR

SCAG
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

OCTOBER 1978

The preparation of this report was financed in part through Planning Grant No. P0091901-01 from the United States Environmental Protection Agency, under the provisions of Section 208 of the Federal Water Pollution Control Act, as amended.

ERRATA

Draft Environmental Impact Report
for the
Draft 208 Plan:
South Coast Planning Area

PAGE	
xx	paragraph 2, line 1: "Many of the actions proposed would result in requirements for increased levels of management, administration, maintenance, inspection, or regulation."
I-1	paragraph 1, line 6: ". . . quality goals of the Act that relate to providing for the protection and propagation of fish, shellfish, ..."
I-1	paragraph 2, line 2: ". . .to achieve the 1983 water quality goal stated in the federal legislation."
III-1	paragraph 2, line 4: ". . . of this report and for 208 planning, a policy is defined as a guide for decisionmaking."
III-1	paragraph 4, line 2: ". . .evaluated in Section IV of this EIR."
III-2	bullet (■)1, line 2: ". . . Draft Development Guide Alternative Population, Housing, Employment . . . . "
III-2	paragraph 2, line 10: ". . . . the Santa Ana Watershed Project Authority, and the Ventura Regional County Sanitation District."
III-3	paragraph 1, line 2: ". . . the 208 Program's policy advisory committee, where three sets . . ."
III-3	paragraph 1, line 3: "The policies selected by the EQRCC in late July 1978 are those that appear in Section IV of this EIR.
III-3	paragraph 3, line 1: "It should be noted that the selected policies have been grouped into four categories for preparation of the 208 Plan."
III-3	paragraph 4, line 2: ". . . Program for Newport Bay (Chapter 5) - have been developed by the Newport - Irvine Waste Management Planning . . ."
IV-1	paragraph 3, line 3: "Frequently, these discussions are more detailed than those found in the . . . ."
IV-18	paragraph 6, line 2: ". . . Soil Conservation Service costs would be passed on to the taxpayer."
IV-23	paragraph 4, line 5: ". . .Regional Water Quality Control Boards revise the National Pollutant Discharge Elimination System (NPDES) . . ."
IV-27,28	These pages are intentionally blank.

IV-30 paragraph 8, line 2: ". . . provide the needed treatment for effluent to be discharged to Mill Creek, a tributary . . ."

IV-33 paragraph 1, line 8: "Those categories of municipal treatment works attaining the highest level . . . "

IV-35 paragraph 3, line 2: ". . . a permit from the state agency that administers the National Pollutant Discharge Elimination System (NPDES) . . ."

IV-36 paragraph 1, line 4: "Where trends do not indicate near term attainment, long-term maintenance of these standards is unlikely . . . ."

IV-43 paragraph 12, line 2: "Mitigation of this impact could be accomplished by the construction of a septic tank pumping facility, . . ."

IV-51 paragraph 2, line 3: ". . . Los Angeles and Orange County metropolitan area portion of the South Coast Planning Area."

IV-52 paragraph 1, line 1: ". . .fifteen years of operation and the disposal of approximately 32 million gallons . . ."

IV-54 paragraph 5, line 1: "Increased demand on Class I landfill capacity that would result from excavation and disposal of . . ."

IV-54 paragraph 7, line 3: "Closure of the Stringfellow site would require disposal of . . . "

IV-59 paragraph 2, line 3: ". . . increase the Bay's marine nursery potential (Ref.1)."

IV-59 paragraph 5, line 3: "Without more specific information, however, the degree to which this project will be . . ."

IV-69 paragraph 4, line 3: " . . . from the Secretary of Agriculture under the Agricultural Cost Sharing Program (§ 208(j)(i) of the Clean Water Act of 1977)."

IV-75 paragraph 4, line 1: "Cost estimates have not yet been prepared for stabilization of the main flood channels in the NIWA area."

IV-81 paragraph 5, line 3: ". . . in water bodies) have caused diseases such as typhoid and hepatitis (Ref.9)."

IV-83 paragraph 4, line 4: " . . . solids that may be hazardous to organisms), improved water safety . . . "

VI-2 paragraph 1, line 2: "Bobby Gaines, Lancaster"

VI-4 paragraph 8, line 1: "Montgomery, James M., Inc. Engineering Study . . ."

Draft Environmental Impact Report

Draft 208 Plan

SOUTH COAST PLANNING AREA



PREPARED FOR

SCAG
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

OCTOBER 1978

BY

DMJM DANIEL, MANN, JOHNSON, & MENDENHALL


Digitized by the Internet Archive
in 2024

https://archive.org/details/C124894691

Table of Contents

	Page
PREFACE	xi
SUMMARY	xv
SECTION I: PROJECT DESCRIPTION	I-1
NONPOINT SOURCE WASTE MANAGEMENT PLAN	I-2
MUNICIPAL AND INDUSTRIAL WASTE MANAGEMENT PLAN	I-4
WATER CONSERVATION AND REUSE	I-5
RESIDUAL WASTE MANAGEMENT PLAN	I-6
INTEGRATED CONTROL PLANS – PRIORITY PROGRAM NEWPORT BAY	I-6
IMPLEMENTATION PLAN	I-10
SECTION II: ENVIRONMENTAL SETTING	II-1
SECTION III: EVALUATION OF DRAFT 208 PLAN POLICIES	III-1
ROLE OF AREAWIDE POLICIES IN 208 PLANNING	III-1
PROCESS FOR AREAWIDE POLICY DEVELOPMENT AND EVALUATION	III-2
SECTION IV: ENVIRONMENTAL EVALUATION OF DRAFT 208 PLAN ACTIONS	IV-1
Chapter 1 – NONPOINT SOURCE WASTE MANAGEMENT PLAN	IV-3
SPILLS OF HAZARDOUS SUBSTANCES	IV-3
Action 1: Develop and implement a comprehensive areawide-local contingency plan.	IV-4
Action 2: Implement specific subregional actions to improve containment and cleanup procedures for hazardous substance spills as described in Table IV-1 and as recommended by participating agencies.	IV-4

Page

BENEFICIAL IMPACTS IV-4
ADVERSE IMPACTS AND MITIGATION MEASURES IV-6

URBAN NONPOINT SOURCE WASTES IV-7

Action 3: *Existing street sweeping programs (prior to passage of Proposition 13) should be continued with consideration given to increasing their effectiveness in reducing wasteloads to receiving waters.* IV-7

(Statement of No Impacts) IV-7

Action 4: *Maintain current litter control programs.* IV-7

(Statement of No Impacts) IV-7

URBAN AND INDUSTRIAL STORMWATER SYSTEM NEEDS IV-7

Action 5: *Maintain current catch basin, inlet basin and storm drain cleaning programs with consideration given to increasing the effectiveness of these programs.* IV-7

(Statement of No Impacts) IV-7

Action 6: *Emphasize reduction of runoff volume and peak flow rates as mitigation measures in environmental impact reports (EIRs) for new developments* IV-7

BENEFICIAL IMPACTS IV-8
ADVERSE IMPACTS AND MITIGATION MEASURES IV-9

CONSTRUCTION ACTIVITIES IV-10

Action 7: *Strengthen existing erosion and grading control ordinances by (1) adopting specific ordinances for areas requiring water quality control, which are to be at least as effective as the Model Erosion and Sedimentation Control Measures for Grading Ordinances guidelines in Appendix B of the draft 208 Plan or (2) adopting the Model Erosion Control Ordinance contained in Appendix C of the draft 208 Plan.*

Action 8: *Stringently enforce erosion and grading control ordinances in areas identified in Table IV-3.*

BENEFICIAL IMPACTS IV-10
ADVERSE IMPACTS AND MITIGATION MEASURES IV-14

Action 9: *Distribute homeowner's guides for new developments containing information on erosion control and prevention of landsliding.* IV-15

Action 10: *Conduct special education and training programs in erosion and sediment control application for the construction industry and local governments.* IV-15

BENEFICIAL IMPACTS IV-15
ADVERSE IMPACTS AND MITIGATION MEASURES IV-16

Page

AGRICULTURAL PRACTICES IV-17

Action 11: Develop and adopt an ordinance that requires Resource Conservation Plans for all areas in agricultural use. IV-17

BENEFICIAL IMPACTS IV-17

ADVERSE IMPACTS AND MITIGATION MEASURES IV-18

Action 12: Expand Resource Conservation Plans to be consistent with 208 Plan Best Management Practices for agriculture. IV-18

(Impacts Discussed Under Action 11) IV-18

Action 13: Develop long-range Best Management Practices and implementation strategies for dairy wastes in the Chino Valley. IV-19

(Statement of No Impacts) IV-19

SALINE WATER INTRUSION IV-19

Action 14: Maintain existing management programs for control of saline water intrusion. IV-19

(Statement of No Impacts) IV-19

UNAVOIDABLE ADVERSE IMPACTS IV-19
SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY IV-19
IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES IV-21
GROWTH-INDUCING IMPACTS IV-21
EFFECTS FOUND NOT TO BE SIGNIFICANT IV-21

References IV-22

Chapter 2 – MUNICIPAL AND INDUSTRIAL WASTE MANAGEMENT PLAN IV-23

CONSISTENCY OF WASTEWATER FACILITIES WITH AREAWIDE GROWTH FORECAST IV-23

Action 15: Plan, design, and construct the municipal facilities necessary to meet the municipal waste treatment system needs shown in the 1978/1979 SWRCB Clean Water Grant Project Priority List consistent with the wastewater flow forecasts shown in Table IV-6A. IV-23

BENEFICIAL IMPACTS IV-30

ADVERSE IMPACTS AND MITIGATION MEASURES IV-30

Page

Action 16: Prepare the 1970-1980 Clean Water Grant Project Priority List to provide for funding of the municipal facilities in the South Coast Planning Area on a schedule consistent with the wastewater flow forecast shown in Table IV-6A and the dates indicated on Table IV-6B. IV-33

BENEFICIAL IMPACTS IV-33

ADVERSE IMPACTS AND MITIGATION MEASURES IV-35

Action 17: Revise NPDES permits to ensure that permitted wastewater flows are consistent with the flows shown in Table IV-6A for the time period of the permit. IV-35

BENEFICIAL IMPACTS IV-35

ADVERSE IMPACTS AND MITIGATION MEASURES IV-35

WASTEWATER FACILITIES PLANNING AND AIR QUALITY MANAGEMENT COORDINATION IV-35

Action 18: Plan, design and construct wastewater facilities consistent with air quality management plan. IV-36

Action 19: Assist in the implementation of the Air Quality Management Plan. IV-36

Action 20: In the preparation of Environmental Impact Reports and Statements (EIRs/EISs) for municipal wastewater facilities, specify as mitigation measures for air quality impacts those tactics and strategies adopted as part of the Air Quality Management Plan. IV-36

BENEFICIAL IMPACTS IV-36

ADVERSE IMPACTS AND MITIGATION MEASURES IV-40

UNSEWERED AREAS IV-40

Action 21: Plan, design, and construct package treatment plants for beachfront Malibu and part of the Malibu civic center area. IV-40

BENEFICIAL IMPACTS IV-40

ADVERSE IMPACTS AND MITIGATION MEASURES IV-41

Action 22: Create On-Site Wastewater Management Zones in the Malibu/Topanga Area pursuant to the Behr Bill. (SB 430) IV-41

Action 23: Develop and implement septic tank management approaches for each on-site waste management zone. IV-41

BENEFICIAL IMPACTS IV-43

ADVERSE IMPACTS AND MITIGATION MEASURES IV-43

Page

Action 24: Revise the Fiscal Year 1978-1979 Clean Water Grant Project priority listing for the Malibu area wastewater facilities. IV-44

(Statement of No Impacts) IV-44

UNAVOIDABLE ADVERSE IMPACTS IV-45
SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY IV-45
IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES IV-45
GROWTH-INDUCING IMPACTS IV-47
EFFECTS FOUND NOT TO BE SIGNIFICANT IV-47

References IV-48

Chapter 3 – WATER CONSERVATION AND REUSE IV-49

STORMWATER CONSERVATION IV-49

Action 25: Maintain current stormwater conservation programs. IV-49

(Statement of No Impacts) IV-49

WASTEWATER RECLAMATION AND REUSE IV-49

Action 26: Develop a long-range plan and implementation strategy to increase wastewater reuse in Los Angeles and Orange Counties through the Los Angeles/Orange Counties regional reuse study. IV-49

(Statement of No Impacts) IV-49

Action 27: Adopt the 208 Plan water-conservation and reuse policies as the policy framework for the Los Angeles/Orange County Reuse Study. IV-50

(Statement of No Impacts) IV-50

Chapter 4 – RESIDUAL WASTE MANAGEMENT PLANT IV-50

WASTEWATER SLUDGE MANAGEMENT IV-51

Action 28: Develop a long-range wastewater sludge management plan and implementation strategy for the Los Angeles/Orange County Metropolitan Area (LA/OMA Project). IV-51

(Statement of No Impacts) IV-51

Page

OTHER SOLID AND NON-SEWERABLE LIQUID WASTES IV-51

Action 29: Develop and implement a strategy for permanently closing the Stringfellow Class I hazardous waste disposal site. IV-51

BENEFICIAL IMPACTS IV-52
ADVERSE IMPACTS AND MITIGATION MEASURES IV-52

Action 30: Suspend the granting of waste-disposal permit exemptions by local solid waste enforcement agencies for Class III landfills. IV-53

Action 31: Require ground water quality monitoring and other monitoring program improvements at Class III sanitary landfills. IV-53

BENEFICIAL IMPACTS IV-53
ADVERSE IMPACTS AND MITIGATION MEASURES IV-53

UNAVOIDABLE ADVERSE IMPACTS IV-53
SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY IV-54
IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES IV-54
GROWTH-INDUCING IMPACTS IV-54
EFFECTS FOUND NOT TO BE SIGNIFICANT IV-54

References IV-56

Chapter 5 — INTEGRATED CONTROL PLANS — PRIORITY PROGRAM FOR NEWPORT BAY IV-57

HABITAT RESTORATION IV-57

Action 32: Implement the Pilot Marsh Restoration Project (PMRP). IV-58

Action 33: Establish a Protected Experimental Habitat (PEH). IV-58

BENEFICIAL IMPACTS IV-59
ADVERSE IMPACTS AND MITIGATION MEASURES IV-59

Action 34: Improve the lower portion of the Upper Bay to enhance wildlife habitat, increase circulation and decrease stagnation. IV-66

BENEFICIAL IMPACTS IV-66
ADVERSE IMPACTS AND MITIGATION MEASURES IV-67

Action 35: On completion of the PMRP improve the salt pan and subtidal areas. IV-67

BENEFICIAL IMPACTS IV-67
ADVERSE IMPACTS AND MITIGATION MEASURES IV-67

	Page
Action 36: Assess the efficiency of upstream sediment controls and develop a program for management of sediment reaching the Bay.	IV-67
BENEFICIAL IMPACTS	IV-68
ADVERSE IMPACTS AND MITIGATION MEASURES	IV-68
SEDIMENT AND EROSION CONTROL	IV-68
Action 37: Finance the development, adoption and enforcement of a local grading ordinance or regulations in the Newport Bay watershed.	IV-69
(Impacts Discussed Under Action 7)	IV-69
Action 38: Set objectives for sediment discharge from agricultural lands and develop and promote adoption of Best Management Practices (BMPs) for the reduction of erosion.	IV-69
(Impacts Discussed Under Actions 11, 12, 13)	IV-69
Action 39: Provide dams for sediment and flow retention in the Lomas de Santiago.	IV-69
BENEFICIAL IMPACTS	IV-70
ADVERSE IMPACTS AND MITIGATION MEASURES	IV-70
Action 40: Stabilize flood control channels in the San Diego Creek system.	IV-73
BENEFICIAL IMPACTS	IV-73
ADVERSE IMPACTS AND MITIGATION MEASURES	IV-74
Action 41: Maintain the reach of San Diego Creek from Jamboree Road to the San Diego Freeway to maximize its erosion control potential consistent with its flood control objectives.	IV-75
BENEFICIAL IMPACTS	IV-75
ADVERSE IMPACTS AND MITIGATION MEASURES	IV-75
Action 42: Assess the need and/or feasibility of downstream desilting basins.	IV-76
(Statement of No Impacts)	IV-76
SURFACE SANITATION	IV-77
Action 43: Obtain vacuum or combination vacuum/mechanical street sweeping equipment at the expiration of existing street sweeping contracts.	IV-77
BENEFICIAL IMPACTS	IV-77
ADVERSE IMPACTS AND MITIGATION MEASURES	IV-77

Page

Action 44: Modify existing street sweeping practices to attain the greatest water quality benefit. IV-78

BENEFICIAL IMPACTS IV-78
ADVERSE IMPACTS AND MITIGATION MEASURES IV-79

Action 45: Improve streets within the NIWA area with curb and gutter, where needed, to facilitate removal of significant street pollutants. IV-79

BENEFICIAL IMPACTS IV-79
ADVERSE IMPACTS AND MITIGATION MEASURES IV-79

Action 46: Identify illegal dump sites within the watershed and increase enforcement of applicable regulations. IV-80

BENEFICIAL IMPACTS IV-80
ADVERSE IMPACTS AND MITIGATION MEASURES IV-80

VESSEL WASTE MANAGEMENT IV-80

Action 47: Enforce existing laws requiring marinas to have accessible sewage pump-out capability. IV-81

BENEFICIAL IMPACTS IV-81
ADVERSE IMPACTS AND MITIGATION MEASURES IV-81

Action 48: Support development of a device for in-the-water hull cleaning of pleasure craft. IV-82

BENEFICIAL IMPACTS IV-82
ADVERSE IMPACTS AND MITIGATION MEASURES IV-82

Action 49: Amend the existing maintenance agreement and increase its funding to provide for emergency cleanup of Lower Newport Bay. IV-83

BENEFICIAL IMPACTS IV-83
ADVERSE IMPACTS AND MITIGATION MEASURES IV-83

Action 50: Develop and implement public education programs designed to reduce vessel-related pollution. IV-83

BENEFICIAL IMPACTS IV-83
ADVERSE IMPACTS AND MITIGATION MEASURES IV-84

	Page
Action 51: Enforce existing state and local regulations in Newport Bay, and develop an enforcement program.	IV-84
(Impacts Discussed Under Actions 47, 48, and 49)	IV-84
INTEGRATED WATER QUALITY EVALUATION	IV-84
Action 52: Determine the source(s) of bacterial contamination to Upper Newport Bay and develop appropriate mitigation measures.	IV-84
Action 53: Determine the source(s) and impacts of the high nutrient levels entering Upper Newport Bay via San Diego Creek and, where needed, develop appropriate mitigation measures.	IV-84
Action 54: Assess the impacts of pollutants entering Upper Newport Bay via storm drains and the Santa Ana-Delhi Channel and, where needed, develop mitigation measures.	IV-84
Action 55: Task 2-3: Ongoing UCI continuing action study.	IV-84
(Statement of No Impacts)	IV-84
UNAVOIDABLE ADVERSE IMPACTS	IV-85
SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY	IV-85
IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES	IV-86
GROWTH-INDUCING IMPACTS	IV-86
EFFECTS FOUND NOT TO BE SIGNIFICANT	IV-87
References	IV-88
SECTION V: ALTERNATIVES TO THE PROPOSED PROJECT	V-1
"NO PROJECT" ALTERNATIVE	V-1
ALTERNATIVE POLICIES FOR AREAWIDE WATER QUALITY MANAGEMENT	V-1
ALTERNATIVE ACTIONS	V-2
SECTION VI: PERSONS AND ORGANIZATIONS CONTACTED/BIBLIOGRAPHY	VI-1

LIST OF TABLES

Table		Page
III-1	Areawide Policy Alternatives for Water Quality Management as Selected by the SCAG Environmental Quality and Resource Conservation Committee July 1978	III-4
IV-1	Contingency Plans for Spills of Hazardous Substances — Summary of Participating/Lead Management Agency Recommended Initial Actions	IV-5
IV-2	Construction Activity Control Measures	IV-11
IV-3	Construction Activities: Erosion and Sediment Control	IV-13
IV-4	Estimated Costs of Erosion and Sediment Control Training for Construction and Government Personnel	IV-16
IV-5	Nonpoint Source Waste Management Plan — Summary Unavoidable Adverse Impacts	IV-20
IV-6A	Summary: Forecasted Wastewater Flows and Existing and Presently Planned Treatment Plant Capacities	IV-24
IV-6B	Years by Which Forecasted Wastewater Flows Would Exceed Existing and Presently Planned Treatment Plant Capacities	IV-29
IV-7	Capital Cost Estimates — Facility Planning Projects — South Coast Planning Area	IV-33
IV-8	High Level Clean Water Grant Priorities	IV-34
IV-9	AQMP Recommended Tactics	IV-37
IV-10	Community Sewer Cost Summary	IV-42
IV-11	OSWMZ Program Cost Summary	IV-44
IV-12	Municipal and Industrial Waste Management — Summary Unavoidable Adverse Impacts	IV-46
IV-13	Residual Waste Management Plan — Summary Unavoidable Adverse Impacts	IV-55
IV-14	Chemical and Biochemical Characteristics of Elutriate from Five Sediment Samples Taken January 1978 from Upper Newport Bay	IV-62
IV-15	Estimated Costs, Hicks Canyon Debris Basins	IV-72
IV-16	Integrated Control Plans — Newport Bay Priority Program — Summary Unavoidable Adverse Impacts	IV-86

LIST OF FIGURES

Figure		Following Page
I-1	South Coast Planning Area	I-2
IV-1	Location of Sampling Stations — Upper Newport Bay	IV-60
V-1	Summary Evaluation of Alternative Areawide Policies for Water Quality Management	V-1

Preface

Preface

On January 11, 1978, the Southern California Association of Governments (SCAG) and the consulting firm of Daniel, Mann, Johnson, & Mendenhall (DMJM) executed a contract for DMJM to prepare areawide environmental assessments for several SCAG planning programs.

This document is the Draft Environmental Impact Report of the Draft 208 Areawide Waste Treatment Management Plan (DEIR Draft 208 Plan). The draft plan has been jointly developed by SCAG and its participating local agencies. The DEIR is being distributed at this time for public review and comment. The Final EIR on the 208 Plan is currently scheduled to be published in early 1979, while submittal of the Final 208 Plan to the State Water Resources Control Board and the Environmental Protection Agency is scheduled for February and May of 1979, respectively.

The overall objective of the draft 208 Plan is to achieve the water quality goals of the Federal Water Pollution Control Act Amendments of 1972 (as amended), which mandates the preparation of areawide waste treatment management plans. The draft 208 Plan is intended to aggregate and coordinate water quality management activities in the South Coast Planning Area into a single comprehensive program. The intent of the DEIR is to identify the potential environmental impacts of implementing the draft 208 Plan and to propose measures to minimize the adverse impacts to the maximum extent possible. This document will provide decisionmakers in the South Coast Planning Area with a framework for assessing the benefits and costs of the proposed draft 208 Plan.

The draft 208 Plan DEIR is programmatic in nature since it assesses the effects of a proposed program and not a specific project. It deviates from project EIRs in that it assesses the effects of recommended policies and actions, which call for programs or activities to be undertaken rather than construction of a particular project at a specific location, as is usually the case in project EIRs. This programmatic orientation requires a more generalized approach to environmental assessment, since program impacts are neither normally confined to a single spatial location nor specifically determined at the program level. Potential impacts of the recommended draft 208 Plan's policies and actions are discussed in relatively generic terms to indicate the types of consequences likely to accompany the implementation of particular programmatic policies and actions.

It should further be recognized that impacts are discussed relative to the conditions that would exist if the 208 Plan were not implemented, and not relative to existing conditions. For example, the statement, "erosion from construction could be reduced" does not necessarily indicate that implementation of the proposed action would reduce construction erosion below existing levels, but that it could reduce the amount of increase that would occur in the absence of the action.

All potential impacts of the proposed plan — both beneficial and adverse — are identified in the DEIR. The assessment, however, because of the plan's programmatic nature, seldom identifies the specific level or degree of impact. The detailed impact levels, together with probabilities of their occurrence, will be determined on each of the actions during the preparation of project EIRs, which are required by law prior to rendering a decision on whether to proceed with the project.

Although specific levels of impacts and a determination of whether these impacts will exceed legal limits (e.g., federal and state ambient air quality standards) are not identified, attempts have been made to qualitatively indicate the significance of an impact. Those impacts believed to be insignificant are so identified in the course of the assessment.

The report's organization also varies somewhat from that of a conventional project's EIR. The environmental setting that normally accompanies the environmental evaluation, in this case, is bound under a separate cover, entitled *Environmental Setting SCAG Region: South Coast Planning Area, Ventura County and Desert Areas.* This detailed document serves not only as the setting for the draft 208 Plan DEIR but also for the DEIRs of the draft *SCAG-78 Growth Forecast Policy* and the draft *Air Quality Management Plan,* both of which DMJM has prepared.

That portion of the 208 Plan DEIR contained in this document is organized into six sections. These sections are briefly outlined below.

- Section I Project Description

  This section contains a brief description of the recommended policies and actions contained in the draft 208 Plan.

- Section II Environmental Setting

  The environmental setting for the South Coast Planning Area has been bound under a separate cover, and is incorporated into this document by reference.

- Section III Evaluation of 208 Plan Policies

  Section III presents an evaluation of the recommended 208 Plan policies. This evaluation was prepared by SCAG, as is indicated by the SCAG logo on the pages of this section.

- Section IV Environmental Evaluation of 208 Plan Actions

  This section focuses upon the potential environmental impacts of the draft 208 Plan actions. It is composed of five separate chapters — one chapter for each of the elements of the draft plan. These chapters are as follows:

  1. Nonpoint Source Waste Management Plan
  2. Municipal and Industrial Waste Management Plan
  3. Water Conservation and Reuse
  4. Residual Waste Management Plan
  5. Integrated Control Plans — Priority Program for Newport Bay

- Section V Alternatives to the Proposed Project

  This section contains a discussion of the reasonable alternatives to the proposed draft 208 Plan, including alternative policies and actions. The "no-project" alternative is also discussed in this section. These alternatives were prepared by SCAG, as is indicated by the SCAG logo on the pages of this section.

- Section VI Organizations and Persons Consulted and Bibliography

  This section identifies all federal, state, or local agencies, other organizations and private individuals consulted in preparing this document. In addition, a bibliography of all the sources utilized in the preparation of the report is included.

Although the report organization deviates from traditional project EIRs, and some of the topics discussed (e.g., mitigation measures) are not presented under distinct individual headings, the Table of Contents identifies where in the report each of these topics may be found.

A summary of the EIR and summary matrices are included immediately following this preface. The summary synthesizes the impacts of all the actions in each plan element, and provides insight to the cumulative impact of all actions in the draft 208 Plan. The matrices, on the other hand, provide a more detailed summary of the potential impacts identified for each action.

Summary

Summary

In general, the draft 208 Areawide Waste Treatment Management Plan is itself a set of mitigation measures designed to lessen the severity of water quality impacts resulting from the development of the South Coast Planning Area, impacts that might otherwise continue to increase as future development occurs. Many of the effects that might result from implementation of the plan are, therefore, beneficial in nature.

The adverse impacts can be viewed as the costs (biophysical, social, and economic) of achieving these desired improvements. As the population of the basin grows, it will be necessary for increasing numbers of people to share its resources, including its inland and marine waters. The costs of managing the distribution and recycling of these resources will increase. The discussion of impacts contained in this document is an attempt to better relate the costs to the benefits of the actions proposed in the draft 208 Plan.

A set of policy statements is presented in the draft 208 Plan. These will form the framework for the more specific actions analyzed in this document. These policies were developed from an initial set of water quality issues arising from an extensive public workshop and committee review process that refined the initial issues into a comprehensive set of guiding policies for development and implementation of the Plan.

Many of the actions contained in the draft 208 Plan concern the continuation of activities that, to some degree, are already being implemented in parts of or throughout the South Coast Planning Area. The degree to which each of the impacts of these actions would occur would, therefore, vary throughout the area, depending on the difference between existing and recommended practices in each locality. The degree to which recommended voluntary actions would be undertaken is also difficult to estimate accurately, and could vary considerably throughout the Planning Area. Finally, most of the actions involve further planning by local jurisdictions before implementation. For these reasons, it is not possible in most cases to be specific about the degree to which the impacts described could occur.

Some of the recommended actions are specific with regard to their location, such as those that pertain to the Priority Program for Newport Bay, the Stringfellow Landfill, and wastewater management in the Malibu area. Others would apply in several locations or throughout the Planning Area.

Those impacts derived from actions dealing with development and construction could occur throughout the entire South Coast Planning Area, but might be most significant in southeastern Orange County, the eastern San Gabriel Valley, western San Bernardino County, and western Riverside

County, since the most intensive development will probably occur in these places (see Draft SCAG-78 Growth Forecast Policy EIR). Impacts related to agriculture will decrease as agricultural lands are developed, but will be significant in parts of all five counties in the Planning Area. Ocean impacts will result primarily from those actions implemented in Orange and Los Angeles Counties. Spills of hazardous wastes might be expected on major transportation routes anywhere in the Planning Area, but will most likely occur in the heavily industrialized areas of Orange and Los Angeles Counties.

Wastewater treatment facilities necessary to accommodate anticipated future growth are described for a number of locations in the basin, in accordance with the State Water Resources Control Board's 1978/79 Clean Water Grant Project Priority List. About $894 million will be spent to develop these facilities in Los Angeles County; $302 million in Orange County; $95 million in Riverside County; and $138 million in San Bernardino County. Coordination with Air Quality Management Plan requirements will be an important element of the development of each of these facilities.

A regional sludge management plan is being developed by the LA/OMA project for the Los Angeles and Orange County Metropolitan Area, and will primarily affect these two counties. Effects of tightening Class III landfill regulations would be felt throughout the Planning Area.

The five elements of the draft 208 Plan include:

1. Nonpoint Source Waste Management Plan
2. Municipal and Industrial Waste Management Plan
3. Water Conservation and Reuse
4. Residual Waste Management Plan
5. Integrated Control Plans — Priority Program for Newport Bay.

Nonpoint Source Waste Management Plan

The Nonpoint Source Waste Management Plan deals entirely with the development and implementation of management plans, and involves no construction. In terms of impacts, the most significant actions are concerned with hazardous waste spills, reduction of runoff volume and peak flow rates from developed areas, construction erosion, and agriculture.

All of the actions within this element have some potential for effecting water quality improvements through reducing the possibility of polluting substances being carried into receiving waters. Ground, surface, and marine waters could benefit. Improvements in the quality of these waters could in turn result in a reduction of adverse impacts on the biotic communities dependent upon them. Decreased runoff from developed areas could increase ground water recharge and reduce the degradation of riparian habitats. Retention of this water could also, however, increase somewhat the possibility of landslides or slippages.

Improved construction and agricultural practices could reduce erosion and conserve soil productivity. Downstream siltation could be reduced, as could landslide and slippage hazards in hillside areas. Some techniques used to reduce runoff and erosion on construction sites could have significant visual impacts, however.

Conservation of water and energy could result from implementation of improved Resource Conservation Plans on agricultural land. Long-term degradation of agricultural soils might occur, however, if recommended irrigation practices are not carefully managed.

Generally, implementation of this element of the draft 208 Plan would result in little or no irreversible commitment of resources except for the financial costs involved, and there would also be no growth-inducing impacts. Potential soil contamination and changes in the area's visual character could affect future beneficial uses of the environment.

The Municipal and Industrial Waste Management Plan

The Municipal and Industrial Waste Management Plan deals with construction of wastewater treatment facilities to meet the needs of anticipated population growth and could result in more short-term construction impacts than other elements of the draft 208 Plan. Other actions in this element with potential impacts include preparation of a Clean Water Grant Priority List, revision of National Pollutant Discharge Elimination System permits to ensure that flows do not exceed planned limits, coordination of 208 facility planning and Air Quality Management planning, and management of sewage wastes in the Malibu area.

The primary benefits to be realized from implementation of this element relate to decreased health and safety hazards. The expansion and improvement of waste treatment facilities would reduce the risk of contamination of water supplies from overloaded systems or from malfunctions. Detailed EIRs will be prepared for each of these facilities prior to determining their locations and sizes.

Effluent discharges from new plants could adversely affect water quality and any biotic communities dependent upon affected waters. These discharges will all receive secondary or advanced treatment, however, which would reduce these effects. Existing plants would be upgraded to secondary treatment, reducing their impact on receiving waters. Increased secondary treatment could increase reuse of wastewater, but could also result in the production of greater amounts of sludge and in a reduction of nutrients to some aquatic and marine organisms.

Increased flows of wastewater effluent would increase ground water recharge along the Santa Ana River, but if these flows became sufficient to cause continuous flow in Reach 4 of the river, tertiary treatment could be required for some areas of San Bernardino County to prevent degradation of water supplies.

Numerous short-term effects would result from construction of the treatment plants, such as air quality degradation, odors, dust, noise, traffic congestion, and consumption of energy. Long-term effects of operation of the plants would include air pollution and possible use of energy, depending on the potential of various facilities for recovering energy from treatment processes. Natural biotic communities could be displaced when new plants are built, and significant visual impacts might result that could affect land use around the plants.

Preparation of a Clean Water Grant Priority List and revision of NPDES permits could effect improvements in wastewater management and planning, and could ensure that funds were most effectively used and equitably distributed. The changes that would be made in the NPDES permits could, however, restrict growth in areas where it would otherwise have exceeded predicted levels.

Coordination with Air Quality Management planning could ensure that air quality impacts resulting from the draft 208 Plan were kept to a minimum.

The construction of package treatment plants in the Malibu area would have impacts similar in nature to those discussed earlier related to larger waste treatment facilities. In addition, a health hazard could be created by the possibility of rupture of the sewage lines, which would be pressurized.

The creation of onsite Wastewater Management Zones and the development of septic tank management approaches for the Malibu/Topanga area could reduce health hazards that might result from

the contamination of ground water by sewage, and could reduce odors associated with septic tank use. Increased quantities of sludge could be created, increased maintenance could be required, and increased noise from pumping could occur. Employment opportunities might be created at sewage treatment plants and at companies involved with maintenance of septic tanks.

The most significant adverse effects on future beneficial uses of the environment from this element could involve destruction of natural habitats where treatment plants were sited, visual impacts, effects on land uses adjacent to the plants, and air emissions. The exact magnitude of these impacts cannot be determined, however, until individual project EIRs are prepared. The only resources irreversibly committed would be funds and energy.

Construction of the municipal treatment facilities could be considered growth-inducing to the extent that they facilitate growth to the levels forecast by SCAG-78 for the year 2000.

The Water Conservation and Reuse

The Water Conservation and Reuse element of the draft 208 Plan contains actions dealing with stormwater conservation, consumer conservation, and wastewater reclamation. These actions either call for the continuation of existing procedures, or for further planning activities. They would have no direct impacts.

Residual Waste Management Plan

The Residual Waste Management element of the Plan deals with sludge and with other solid and nonsewerable liquid wastes. Actions refer to the LA/OMA project, to the closing of the Stringfellow Class I disposal site in Riverside County, and to the tightening of monitoring programs in effect at Class III sanitary landfills. The LA/OMA project is still in the conceptual planning stage, and no direct impacts will occur until implementation.

Closing the Stringfellow site and tightening Class III landfill monitoring programs could each reduce the potential for contamination of ground and surface waters, for adverse impacts on the biotic communities dependent on these waters, and for increased public health hazards. Closing the Stringfellow site might result in financial liability for future contamination on the part of the agency assuming responsibility for the closure.

Future beneficial uses of the environment would not be affected by these actions. Also, there would not be a significant irreversible commitment of resources except for the financial costs involved and the use of some Class I landfill capacity for disposing of contaminated soils from the Stringfellow disposal site. No growth-inducing impacts would occur from these actions.

Integrated Control Plans – Priority Program for Newport Bay.

The Priority Program for Newport Bay is a plan for achieving water quality improvements in the San Diego Creek Watershed and in Newport Bay. This undertaking will eventually lead to restoration of an ecologically viable marshland community in the upper portion of the Bay. Specific parts of the plan deal with sediment and erosion controls, habitat restoration, surface sanitation, vessel waste management, and water quality evaluation.

Actions intended to improve control of erosion and sedimentation include the adoption of more effective grading regulations, increased use of Best Management Practices on agricultural lands, the construction of foothill dams for sediment retention and flood control, the stabilization of flood

control channels, and the removal of sediments from portions of San Diego Creek between Jamboree Road and the San Diego Freeway. All these actions could help to reduce the supply of sediments deposited in Newport Bay, which could have a significantly beneficial effect on the ecological viability of the Bay as a marshland community. The foothill dams could also help to reduce flood hazards.

Some biotic organisms, however, could be adversely affected by reductions in sedimentation, due to loss of substrate and nutrients. There could also be a reduction of riparian habitat because of construction of the dams and channelization of streams. Changes in the visual character of the foothill area due to the dams and channelization could be significant, since these structures could be visible from a large area. A new flood hazard could result from potential failure of a foothill dam. Since various elements of the sediment and erosion control plan would remove different amounts of sediment at different costs, continuing studies would be done to assess the potential effectiveness and the desirability of proposed actions.

The habitat restoration program is an ambitious attempt to restore parts of the heavily impacted Upper Bay to an ecologically viable marshland community. Significant changes to the Bay's biotic systems could result. These should be mostly beneficial, though some organisms could be adversely affected. The specific nature of the impacts of this program will not become apparent until it is well under way, and continuing studies are planned to assess these impacts and incorporate the findings into the program. The discussion included in this report of the impacts of the habitat restoration program is intended only as an overview, since a detailed EIR of the plan is currently in preparation.

Actions included to improve surface sanitation conditions would result in a more optimum mixture of mechanical and vacuum sweeping machines, would modify street sweeping practices to achieve greater water quality benefits, and would add curbs and gutters in some areas to increase sweeping effectiveness. All of these actions could reduce the potential for contamination of surface waters, and could improve the general sanitary condition and the appearance of streets. Increased noise could result from use of vacuum sweepers. Illegal dumping would be more closely regulated under a final action in this section, which could decrease public health hazards from ground water contamination and reduce visual degradation from illegal dumping.

This plan contains various measures to reduce water contamination resulting from the operation of vessels. These include stricter enforcement of marina laws regarding availability of sewage pump-out facilities, and better vessel cleaning procedures. Other actions involve increased funding for emergency cleanup in the Bay and the development of public education programs for vessel operators. Besides improvements in water quality that could result from these actions, effects on biotic life in the Bay could be lessened, public health hazards reduced, and the appearance of the Bay improved.

The Integrated Water Quality Control Plan consists of actions for instituting a long-term comprehensive monitoring program to provide more complete information for planning and management of the Bay. No direct impacts would result from this program.

The economic costs of implementing the recommended actions are among the most significant of the draft 208 Plan's adverse impacts. These costs are often difficult to determine accurately because of the programmatic nature of the plan. A range of costs is possible for many actions, and the required funding will not be apparent until further planning is accomplished. For these reasons, it is not possible to accurately estimate the total economic cost of the Plan.

In general, one of the results of many of the actions contained in the draft 208 Plan would be to more equitably distribute the cost of some kinds of mitigation so that more of these costs would be borne by the people benefited than by the general public. In such cases, increased development costs would be ultimately passed on to the user of a site rather than to public agencies (the general public) that might ultimately have been responsible for cleanup, protection, or restoration had the improvements not been made.

Many of the actions proposed would result in requirements for increased levels, management, administration, maintenance, inspection, or regulation. Besides the increased economic costs required for each of these activities, certain social impacts could occur as well. Increased employment opportunities could result, but an adverse reaction on the part of some members of the public to increased levels of governmental activity and regulatory complexity could also occur.

Three types of alternatives to the proposed draft 208 Plan were considered: a no-project alternative, alternative management policies, and alternative actions. The no-project alternative is not considered feasible, since preparation of the 208 Plan is required by federal law. Policy alternatives were subjected to a lengthly areawide review before being refined to the existing policy statements. This analysis is described in documents listed in Section III. A range of implementation levels was considered for each of the proposed actions. These varied from reductions in current program levels for the purpose of reducing expenditures to increased levels of activity for the purpose of achieving greater water quality improvements. In selecting a proposed action from the range of alternatives available in each case, emphasis was placed on demonstrated water quality needs, estimated cost-effectiveness, and the potential for implementation in a timely fashion.

While growth-inducing impacts are discussed here, secondary impacts resulting from growth are not. These are analyzed in the draft SCAG-78 Growth Forecast Policy EIR.

The matrices that follow provide a more detailed summary of the actions proposed in the draft 208 Plan.

RESIDUAL WASTE MANAGEMENT PLAN
SUMMARY ENVIRONMENTAL EVALUATION

TABLE
RESIDUAL WASTE MANAGEMENT PLAN
SUMMARY ENVIRONMENTAL EVALUATION

Recommended Actions	Beneficial Impacts	Adverse Impacts	Mitigation Measures	Unavoidable Adverse Impacts	Short-Term Use/Long-Term Productivity	Irreversible Commitment of Resources/Environmental Changes	Growth Inducing Impacts
SLUDGE MANAGEMENT							
Action 28: Develop a long-range wastewater sludge management plan and implementation strategy for the Los Angeles/Orange County Metropolitan Area (LA/OMA Project).	← No direct impacts anticipated without provisions for implementation →						
OTHER SOLID AND NON-SEWERABLE LIQUID WASTES							← No Growth Inducing Impacts Anticipated →
Action 30: Suspend the granting of waste-disposal exemptions by local solid waste enforcement agencies for Class III landfills.	Significant reduction or elimination of ground water and surface water contamination in the Glen Avon region	Relocation of wastes in another Class I landfill required	Select closure option that has the least amount of wastes requiring relocation.	X	X	X	
	Improved environment for aquatic biota	Estimated public costs ranging between $190,000 and $3,835,000, depending on closure method selected		X	X	X	
	Elimination of air emissions associated with spray evaporation.	Assuming no state financing, potential assumption of liability for contamination problems by municipal agencies if project locally funded.					
Action 30: Suspend the granting of waste disposal permit exemptions by local solid waste enforcement agencies.	Reduce potential for contamination of ground water supplies proximate to Class III landfills	Increased potential for illegal dumping of hazardous wastes with stricter regulations	Increase penalties for illegal dumping Public information program	X	X		
Action 31: Require ground water quality monitoring and other monitoring program improvements at Class III sanitary landfills.	Reduced potential of health hazards to the general public and sanitary landfill personnel.	Increased administration, inspection, and dumping costs.	Increase fines for illegal dumping.	X	X		

Recommended Action	Beneficial Impacts	Adverse Impacts	Mitigation Measures	Unavoidable Adverse Impacts	Short-Term Use/Long-Term Productivity	Irreversible Commitment of Resources/Environmental Changes	Growth Inducing Impacts
SPILLS OF HAZARDOUS SUBSTANCES	Facilitates efficient response and effective confinement, decreasing hazards to water and air quality, biological communities, public health, and recreational activities	Slight increase in demand for Class I landfill capacity	Reduction in spills	X			↑
Action 1: Develop and implement a comprehensive area-wide local contingency plan.		Private capital investment required	Accrued savings resulting from decrease in accident rates	X	X	X	
Action 2: Implement specific subregional actions to improve containment and clean-up procedures for hazardous substance spills as described in Table IV-1 and as recommended by participating agencies.	Potential improvement in visual quality of marine environment	Development and implementation costs requiring public investment approximately $250,000.	Centralized equipment and trained personnel pool	X	X	X	
	Reduced potential for caustic damage to paved surfaces		More stringent spill fines				
	Identification of future corrective actions		Federal funding to distribute costs over a larger population.				
	Reduced potential for litigation resulting in lower liability insurance costs and associated economic externalities						
	Increased employment opportunities.						
URBAN NONPOINT SOURCE WASTES							
Action 3: Existing street sweeping programs (prior to passage of Proposition 13) should be continued with consideration given to increasing their effectiveness in reducing wasteloads to receiving waters.	← No direct impacts anticipated →						
Action 4: Maintain current litter control programs.	← No direct impacts anticipated →						
URBAN AND INDUSTRIAL STORMWATER SYSTEM NEEDS							
Action 5: Maintain current catch basin, inlet basin and storm drain cleaning programs with consideration given to increasing the effectiveness of these programs.	← No direct impacts anticipated →						
Action 6: Emphasize reduction of runoff volume and peak flow rates as mitigation measures in environmental impact reports (EIRs) for new developments.	Increased potential for ground water recharge	Potential decrease in sediments/nutrients for aquatic and marine biota	Analysis to determine optimum levels of sedimentation	X			
	Potential increases in water for native vegetation, particularly riparian, and reduced irrigation requirements for ornamentals	Increased ground water recharge resulting in an increased potential for accidental ground water contamination	Analysis to determine soil depth to ground water supplies	X			
	Potential improvement in visual character of natural areas	Potential increase in slope failure, waterlogging, ponding, seepage, and/or salt loading in water supplies	Analysis to determine management practices appropriate for given areas	X			
	Slight potential reduction in flood hazards, sedimentation, and erosion	Increased use of natural resources, including energy	Consider conservation of resources during design and construction	X		X	
	Slight improvement in water quality and biotic communities	Potential for increased public resentment of government regulations	Develop public information program	X			
	Reduction in construction costs for flood control facilities.	Impairment of visual quality through use of recommended materials and techniques	Professionally prepared instruction manuals showing how materials and techniques should be used	X	X		
		Potential construction delays	Streamline permit process, simplify procedures, and encourage agency coordination	X			
		Associated costs requiring private investment transferred to the buyer or tenant.	In-depth cost/benefit studies to determine effectiveness of the action.	X	X	X	
CONSTRUCTION ACTIVITIES							
Action 7: Strengthen existing erosion and grading control ordinances by (1) adopting specific ordinances for areas requiring water quality control, which are to be at least as effective as the Model Erosion and Sedimentation Control Measures for Grading Ordinances guidelines in Appendix B of the draft 208 Plan or (2) adopting the Model Erosion Control Ordinance contained in Appendix C of the draft 208 Plan.	Reduced erosion/sedimentation resulting in improved water quality and aquatic/marine environments	Decrease in supply of sediments transported to the ocean resulting in beach deterioration	Artificial augmentation of beaches	X	X		
	Long-term reduction in landslides/slippages and associated public safety risks	Potential increase in stream channel erosion with clearer water flows	Case-by-case analysis of total effect of reduced volumes and clearer water flows	X			
	Improved soil productivity resulting in greater amounts of natural vegetation and wildlife remaining after construction and/or reduced need for fertilizers and soil amendments	Impairment of visual quality through use of recommended grading/erosion materials and techniques	Professionally prepared instruction manuals showing how materials and techniques should be used	X	X		
Action 8: Stringently enforce erosion and grading control ordinances in areas identified in Table IV-3.	Potential improvement in visual quality resulting from more and/or different vegetative cover	Increased use of natural resources, including energy	Consider conservation of resources during design and construction	X		X	
	Slight potential increase in ground water recharge	Construction delays	Streamline permit process, simplify procedures, and encourage agency coordination	X			
	Slight potential reduction in flood hazards	Potential for increased public resentment of government regulations	Develop public information program	X			
	Reduced potential for erosion of stream channels resulting from decrease in flow volumes.	Time and costs for preparing ordinances and associated public hearings, staff reviews, final adoption, and distribution	Increased levy on building permits	X	X	X	
		Increased administrative and enforcement costs	Savings accruing from reduced erosion/sedimentation	X	X	X	
			Develop public information program				
			See following mitigant				
		Increased development costs requiring private investment transferred to the buyer or tenant.	In-depth cost/benefit studies to determine effectiveness of the action.	X	X	X	
Action 9: Distribute homeowner's guides for new developments containing information on erosion control and prevention of landsliding.	See Actions 7 and 8 above.	Decrease in supply of sediments transported to the ocean resulting in beach deterioration	Artificial augmentation of beaches	X	X		
		Potential increase in stream channel erosion with clearer water flows	Case-by-case analysis of total effects of reduced volumes and clearer water flows	X			
		Increased use of natural resources including energy	Consider conservation resources during design and construction	X		X	
		Impairment of visual quality through use of recommended grading/erosion materials and techniques	Professionally prepared instruction manuals showing how materials and techniques should be used	X	X		
		Costs for preparing and distributing information.	Secure cooperation from lenders and public agencies in displaying and/or distributing information.	X	X	X	
Action 10: Conduct special education and training programs in erosion and sediment control application for the construction industry and local governments.	See Actions 7 and 8 above.	See Action 9 above. Estimated costs – $107,500.	See Action 9 above.	See Action 9 above. X			
AGRICULTURAL PRACTICES							
Action 11: Develop and adopt an ordinance that requires resource conservation plans for all areas in agricultural use.	Improved ground water quality resulting from recommended irrigation methods according to Soil Conservation Service	Potential decrease in agricultural productivity resulting from reduced fertilizer use	Information, training, and assistance to increase efficient use of fertilizers	X	X		
	Water and energy conservation with recommended irrigation methods	Potential salt buildup in soil if irrigation practices not administered properly and carefully monitored	Develop public information and monitoring programs	X	X		
	Improved water quality through retrieval of tail water	Potential increased resentment of government regulation	Develop public information program	X			
	Maintenance of soil productivity through erosion control tactics.	Increased costs totaling approximately $640,000	Low-cost government loans	X	X	X	
		Capital investments; training, labor, educational and publicity programs; planning and management; regulation and enforcement; and continued research and testing, requiring both public and private investment.	Formation of cooperatives In-depth cost/benefit studies to determine effectiveness of the action.	X	X	X	
Action 12: Expand Resource Conservation Plans to be consistent with 208 Plan Best Management Practices for agriculture.	See Action 11 above.	See Action 11 above. Estimated costs – $99,000.	See Action 11 above.	See Action 11 above. X	X	X	
Action 13: Develop long-range Best Management Practices and implementation strategies for dairy wastes in the Chino Valley.	← No direct impacts anticipated without provisions for implementation →						
SALINE WATER INTRUSION							
Action 14: Maintain existing management programs for control of saline water intrusion.	← No direct impacts anticipated →						

No Growth Inducing Impacts Anticipated

Recommended Actions	Beneficial Impacts	Adverse Impacts	Mitigation Measures	Unavoidable Adverse Impacts	Short-Term Use/Long-Term Productivity	Irreversible Commitment of Resources/Environmental Changes	Growth-Inducing Impacts
CONSISTENCY OF MUNICIPAL WASTEWATER FACILITIES WITH THE AREAWIDE GROWTH PROJECTION							
Action 15: Plan, design, and construct the facilities necessary to meet the municipal waste treatment systems needs shown in the 1978-1979 SWRCB Clean Water Grant Priority List, consistent with the wastewater flow forecasts shown in Table IV-6A.	Reduce public health hazards and water quality problems Facilitates attainment of effluent standards Increased availability of aquatic habitat Increased solid substrate for marine organisms Increased availability of wastewater for reuse Increased ground water recharge in Reach 3 of the Santa Ana River Increased effluent treatment capacity Increased employment opportunities.	Increased effluent discharges to the marine environment resulting in increased turbidity, changes in water temperature, and potential alteration of benthic habitat	Secondary treatment (partially effective)	X			Growth-inducing to the level of the SCAG-78 Growth Forecast
		Increased concentration of fertilizer salts and heavy metals and reduced organic nutrients with secondary treatment of wastewater	Implementation of enclosed bays and estuaries policy Appropriate exercise of authority for waiver of secondary treatment requirements coupled with industrial pretreatment	X			
		Increased sewage sludge volumes with secondary treatment of wastewater	Implementation of wastewater solids management plan (LA/OMA Project)	X	X		
		Tertiary treatment required upon attainment of continuous flows in Reach 4 of the Santa Ana River	Regional tertiary treatment facility Upgrade existing treatment plants Revise SCAG-78 Growth Forecast	X			
		Potential seasonal algae blooms and attendant odor problems in aquatic environments		X			
		Localized odor problems and increases in carbon monoxide during treatment plant operations	Inspection and maintenance (partially effective) Enclosed facilities Emission control devices	X	X		
		Consumption of natural resources and energy during treatment plant operations	Production of methane gas by treatment plant digesters (partially effective)	X	X	X	
		Potential loss of wildlife habitats in siting treatment plants	Careful site selection	X	X	X	
		Potential changes in visual character/incompatibility of treatment plants with surrounding areas	Careful design and landscaping (partially effective)	X	X		
		Localized increases in dust, noise, traffic, and erosion/sedimentation; and consumption of electricity, gas, and diesel fuel during construction of treatment plants	Implement dust control practices at construction site Noise abatement devices (partially effective) Implementation of proper construction and grading practices.	X			
		Construction costs of approximately $1,429,000,000 requiring public investment.		X	X	X	
Action 16: Prepare the 1979-1980 Clean Water Grant Priority Test to provide for funding of the municipal facilities in the South Coast Planning Area on a schedule consistent with the wastewater flow forecasts shown in Table IV-6A and the dates indicated on Table IV-6B.	Projects with near-term needs would be given highest priority in accordance with uniform effluent standards Economies of scale through emphasizing expansion in developed areas Encourages urban in-filling.	Potential preemption of funds to previously recognized high priority projects.	Disallowing preemption of Priorities A through D.				
Action 17: Revise NPDES permits to ensure that permitted wastewater flows are consistent with the flows shown in Table IV-6A for the time period of the permit.	Ensures environmental impacts would not exceed those identified for Action 15 Prevents premature commitments to ultimate treatment plant capacity.	Potential restriction of growth in areas with population trends not consistent with that projected in the SCAG-78 Growth Forecast.	Increased water conservation Increased reuse of water Revision of SCAG-78 Growth Forecast.				
WASTEWATER FACILITIES PLANNING AND AIR QUALITY MANAGEMENT COORDINATION							
Action 18: Plan, design, and construct wastewater facilities consistent with Air Quality Management Plan. Action 19: Assist in the implementation of the Air Quality Management Plan. Action 20: In the preparation of Environmental Impact Reports and Statements (EIRs/ELSs) for municipal wastewater facilities, specify as mitigation measures for air quality impacts those tactics and strategies adopted as part of the Air Quality Management Plan.	Increases potential for attainment of air quality standards by 1987 Decreases potential for loss of federal funding for treatment plant construction Beneficial impacts resulting from implementation of AQMP tactics identified in AQMP DEIR.	Diversion of facility planning funds from other purposes		X			
		Adverse impacts resulting from implementation of AQMP tactics identified in AQMP DEIR.	See AQMP DEIR.	See AQMP DEIR			
UNSEWERED AREAS							
Action 21: Plan, design, and construct package treatment plants for beachfront Malibu and part of the Malibu Civic Center area.	Improved water quality through prohibiting septic tanks in unsuitable areas Decrease in public health risks from septic tank failure Reduces ground water contamination in areas with high water tables Increases potential for water reuse.	Potential health hazard with accidental leaks or breaks in high-pressure sewage collection system		X			
		Consumption of natural resources and energy during treatment plant operations		X	X	X	
		Potential disturbance of oak woodland north of Pacific Coast Highway	Careful site selection	X	X	X	
		Changes in visual character/incompatibility of treatment plants with surrounding area	Careful design and landscaping (partially effective)	X	X		
		Potential increase in fire hazards during construction and operation of community treatment plants	Appropriate equipment modifications (partially effective)	X			
		Localized increases in dust, noise, traffic, and erosion/sedimentation; and consumption of electricity, gas, and diesel fuel during construction	Increase moisture content of soil Noise abatement devices (partially effective) Implementation of proper construction and grading practices.	X			
		Construction costs of approximately $7,240,000; potential Tapia pumping facility, $455,000, both requiring local public investment.		X	X	X	
Action 22: Create onsite wastewater management zones in the Malibu/Topanga area pursuant to the Behr Bill (SB 430). Action 23: Develop and implement septic tank management approaches for each onsite waste management zone.	Prevention of future problems from periodic pumping and inspection of septic tanks Maximizes operating efficiency Reduces potential for tank failure and attendant effluent contamination of water supplies and public health risks Localized improvement in air quality from reduction of odors Funding for future studies substantiating the need and feasibility for alternatives to septic tanks Documents septic tank conditions for prospective buyers Stimulation of local septic tank pumping industry.	Increased pumping of septage requiring disposal and/or reuse		X	X		
		Localized air emissions with increased treating of septage	Construction of Tapia treatment plant (partially effective)	X			
		Periodic increases in noise during pumping of septic tanks	Noise abatement devices (partially effective)	X			
		Increased costs to homeowners		X	X	X	
		Significant inconvenience to homeowners during unearthing of septic tanks		X			
		Reduced suitability for development resulting from stricter siting regulations		X	X		
		Potential for increased public resentment of government regulations	Assessment of associated cost/benefits of contemplated actions Develop public information program	X			
		Associated planning costs of approximately $69,000 requiring local public investment.		X	X	X	
Action 24: Revise the fiscal year 1978-79 Clean Water Grant Project Priority List for the Malibu area wastewater facilities.	← No significant change anticipated →						

Recommended Action	Beneficial Impacts	Adverse Impacts	Mitigation Measures	Adverse Impacts	Growth Inducing Impacts Anticipated			
HABITAT RESTORATION								
Action 30: The California Department of Fish and Game has commenced implementation of the Pilot Marsh Restoration Project (PMRP) which shall be completed by January 1980. The estimated cost for this project is $540,000. Funds shall be provided by the state of California and shall be administered by the Department of Fish and Game. Action 31: On completion of the PMRP, the Department of Fish and Game shall establish a Protected Experimental Habitat (PEH) at a cost of approximately $2–3 million (1978).	Biological enhancement of wetlands environment resulting from increased tidal action Provides 200-300 acres of wetland habitat, especially benefiting migratory and resident birds. Potential, unquantified, benefit to rare/endangered Light-Footed Clapper Rail, Belding's Savannah Sparrow, the California Least Tern, and the California Brown Pelican Provides educational and scientific program(s) for visitors.	Potential increase in erosion resulting from increased tidal action Temporary disruption/destruction of animal habitats in general area of saltpan during dredging and dike removal; destruction of Horned Lark habitat Completely changes physical environment/productivity, potentially limited by presence of people and recreational activities Increase in suspended toxic substances; reduction in photosynthesis, change in temperature, pH, feeding habits, and hydrological patterns; redeposition of sediments with effects on nonmotile/motile/attached organisms; and potential navigational problems during and/or resulting from dredging Consumption of energy during dredging Potential temporary increase in air pollution during dredging Estimated construction costs for PEH – $2–3 million; PMRP – $540, 000.	Analysis to determine the significance of eliminating saltpan Time construction to avoid breeding, migration, and spawning periods Limitations imposed on pedestrian traffic, boating, and fishing Restriction of dredging to saltpan area Temporary construction of main dike and diversion of San Diego Creek Disposal of dredged spoil in [illegible] approved location	X X X X X X		X	
Action 34: On completion of the PMRP, the Department of Fish and Game shall improve the lower portion of the upper bay to enhance wildlife habitat, [illegible] and [illegible]	Potential improvement in tidal circulation and flushing Potential improvement in nesting habitats on North Island resulting from [illegible]	Disruption of birds and spawning fish (February through August) by [illegible]	Schedule dredging to avoid breeding season, obtaining consent of agencies through additional studies if necessary For associated mitigants, see Actions 32 and 33 above	X				
Action 35: On completion of the PMRP, the Department of Fish and Game shall, when sufficient data is available from the PEH or PMRP, improve the saltpan and subtidal areas. The schedule for attaining the final configuration is 10 to 20 years and the anticipated cost is approximately $10 million (1978). Funding shall be provided by state, federal, and/or other funding sources and administered by the Department of Fish and Game.	See Actions 32 and 33 above.	See Actions 32 and 33 above Estimated cost – $10 million.	See Actions 32 and 33 above.	X	X	X		
Action 36: The California Department of Fish and Game, with assistance provided by the OCEMA, UCI, and other monitoring agencies, shall assess the efficiency of upstream sediment controls and develop a program for management of sediment reaching the bay. The anticipated yearly cost of this program is estimated to be $200, 000 (1978) per year. Funding for this program shall be provided by state, federal, or other sources and administered by the Department of Fish and Game.	Protects investment required for implementing PMRP and PEH.	For dredging impacts see Actions 32 and 33 above Annual cost estimated to be $200, 000.	For associated mitigants see Actions 32 and 33 above.	X	X	X		
SEDIMENT AND EROSION CONTROL								
Action 37: Each appropriate jurisdiction within the Newport Bay watershed shall finance the development, adoption, and enforcement of a grading ordinance or regulations for those portions of its area in the Newport Bay watershed. These ordinances or regulations shall be at least as stringent as the SCAG areawide model grading ordinance as amended by NIWA, and shall be implemented within six months of the adoption of the 208 Plan.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan Approximately 17 additional inspectors required at an estimated additional annual cost of $680, 000; personnel retraining required approximately every five years Additional costs associated with stricter standards, reduced bonding/deadline, landscape maintenance, fees, security bonds, etc.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan.	X X	X X	X X		
Action 38: The Regional Water Quality Control Board will set objectives for sediment discharge from agricultural lands and the Orange County Resource Conservation District shall develop and promote adoption of best management practices (BMPs) for the reduction of erosion consistent with these objectives. The Orange County Environmental Management Agency shall design and maintain its flood protection facilities to minimize sediment transport from sheet erosion of agricultural fields. (condensed wording)	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan.	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan Associated costs (undetermined).	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan.	X	X	X		
Action 39: The Orange County Environmental Management Agency shall, where proven reasonably practicable, provide dams for sediment and flow retention in the Lomas de Santiago. (condensed wording)	Reduction in sedimentation approximately 3 percent with two Hicks dams; 14 percent with all 13 dams Reduced flood hazards Benefits to biotic life in bay Increased employment opportunities for construction workers and planners.	Inundation hazard resulting from potential for dam failure or sudden release of water Potential effects on some biotic life resulting from reduced sediment nutrients reaching Newport Bay Elimination of riparian communities resulting from construction of dams Slight decrease in sediment for beach replenishment Potential disturbance/destruction of archaeological and/or paleontological sites during construction of dams, roads, storage yards, borrow pits, etc. Probable significant change in visual character/incompatibility with surrounding areas Slight increase in traffic congestion and air pollution if debris trucked to landfills Increased erosion/sedimentation during construction Temporary disturbance to wildlife resulting from construction activities. Estimated total construction costs for the two Hicks dams – $4, 208, 000; annual operating and maintenance – $16, 000. Construction costs for remaining 11 dams – $31, 000, 000.	Site analysis, planning, design, construction supervision, inspection, and maintenance Planned studies to identify sediment sources, relative contribution, means of transport, and effective management. Should also investigate effects of various sedimentation rates on estuarine biota Cost/benefit studies Artificial augmentation Preconstruction surveys, salvage, and monitoring Monitor visibility Screening with vegetation compatible with existing surroundings Early consultation with landscape architect Observance of grading ordinances and regulations.	X X X X X X X X X	X X X X X X	X X X X X X		
Action 40: Stabilize flood control channels in the San Diego Creek system. (condensed wording)	Potential effects on some biotic life resulting from reduced sediment nutrients reaching Newport Bay Reduces sedimentation in Newport Bay Increase employment opportunities Potential increase in ground water recharge from some methods of stabilization Flood hazards reduced by increased flow velocities in channel (increased capacity).	Decrease/prevention of groundwater recharge of channels lined Potential effects on some biotic life resulting from reduced sediment nutrients reaching Newport Bay Slight decreases in sediment for beach replenishment Potential increase in flood hazard if velocity decreased (decreased capacity) Slight potential disturbance/destruction of archaeological and/or paleontological sites Probable change in appearance depending on materials used Increase erosion to storm channels from construction Associated, undetermined costs.	Eliminate use of liners in selected areas For associated mitigants see Action 39 above Artificial augmentation Preconstruction survey Vegetative screening Integration with surroundings Early consultation with landscape architect Observance of erosion control ordinances X	X X X X X X X	X X X	X X X		
Action 41: Upstream improvements and administrative controls may not adequately control all of the sediment transported from the watershed. Therefore, the road in San Diego Creek from Jamboree Road to the San Diego Freeway shall be maintained in such a manner so as to maximize its erosion control potential consistent with its intended purpose of flood control protection.	Potential effects on some biotic life resulting from reduced sediment nutrients reaching Newport Bay Reduced sedimentation of Newport Bay Increased employment opportunities.	Potential effects on some biotic life resulting from reduced sediment nutrients reaching Newport Bay Potential change to areas' visual [illegible] Increase erosion/sedimentation during construction Slight decreases in sediment for beach replenishment Associated costs in excess of $200, 000.	For associated mitigants see Actions 40 and 41 above Screening with vegetation compatible with existing surroundings Observance of grading ordinances and regulations Artificial augmentation.	X X X X	X X X	X X X		
Action 42: As an additional element of the continuing action program, NIWA shall assess the need and/or feasibility of downstream desilting basins. The following items shall be addressed in this assessment: A. The need for a downstream sedimentation basin(s) with all other management being implemented and in place (e.g., grading ordinances, BMPs, in-channel sediment management). B. Identify alternative sites for downstream sediment control basins. Sites "A" and "B", identified in the Phase II Subtask 5 report shall also be included as alternative sites. C. The effectiveness of each site in sediment removal at various flow rates shall be assessed. D. The costs of construction and maintenance of each alternative site shall be evaluated. These costs shall include not only the direct costs of construction and maintenance, but also the indirect costs to both the surrounding communities and natural interests as a result of development of each site.	← No direct impacts anticipated →							

INTEGRATED CONTROL PLANS – PRIORITY PROGRAM FOR NEWPORT BAY
SUMMARY ENVIRONMENTAL EVALUATION

Recommended Action	Beneficial Impacts	Adverse Impacts	Mitigation Measures	Unavoidable Adverse Impacts	Short-Term Use/Long-Term Productivity	Irreversible Commitment of Resources/Environmental Changes	Growth-Inducing Impacts
HABITAT RESTORATION							
Action 32: The California Department of Fish and Game has commenced implementation of the Pilot Marsh Restoration Project (PMRP) which shall be completed by January 1980. The estimated cost for this project is $540,000. Funds shall be provided by the state of California and shall be administered by the Department of Fish and Game.	Biological enhancement of estuarine environment resulting from increased tidal prism	Potential increase in erosion resulting from increased tidal prism		X			
	Provides 200-300 acres of wetland habitat, especially benefiting migratory and resident birds	Temporary disruption/destruction of animal habitats in general area of saltpan during dredging and dike removal; destruction of Horned Lark habitat	Analysis to determine the significance of eliminating saltpan Time construction to avoid breeding, migration, and spawning periods	X		X	
	Potential, unquantified benefit to rare/endangered Light-Footed Clapper Rail, Belding's Savannah Sparrow, the California Least Tern, and the California Brown Pelican	Complete ecological restoration/productivity potentially limited by presence of people and recreational activities	Limitations imposed on pedestrian traffic, boating, and fishing	X			
	Provides educational and scientific program(s) for visitors.	Increase in suspended toxic substances; reduction in photosynthesis, clarity, O_2; changes in temperature, pH, feeding habits, and hydrological patterns; redeposition of sediments with effects on primary producers and bottom organisms; and potential navigational problems during and/or resulting from dredging	Restriction of dredging to saltpan area Temporary reconstruction of main dike and diversion of San Diego Creek Disposal of dredged spoil in confined/approved locations	X			
		Consumption of energy during dredging		X	X	X	
		Potential temporary increase in air pollution during dredging	Emission control devices (partially effective).	X			
		Estimated construction costs for PEH – $2-$3 million; PMRP – $540,000.		X	X	X	
Action 34: On completion of the PMRP, the Department of Fish and Game shall improve the lower portion of the upper bay to enhance wildlife habitat, increase circulation, and decrease stagnation.	Potential improvement in tidal circulation and flushing Potential improvement in nesting habitats on North Island resulting from restricted access.	Disruption of birds and spawning fish (February through August) during channelization	Schedule dredging to avoid breeding season, obtaining required information through additional studies if necessary	X			
		For additional dredging impacts and costs, see Actions 32 and 33 above.	For associated mitigants, see Actions 32 and 33 above.				
Action 35: On completion of the PMRP, the Department of Fish and Game shall, when sufficient data is available from the PEH or PMRP, improve the saltpan and subtidal areas. The schedule for attaining the final configuration is 10 to 20 years and the anticipated cost is approximately $10 million (1978). Funding shall be provided by state, federal, and/or other funding sources and administered by the Department of Fish and Game.	See Actions 32 and 33 above.	See Actions 32 and 33 above Estimated cost – $10 million.	See Actions 32 and 33 above.	X	X	X	
Action 36: The California Department of Fish and Game, with assistance provided by the OCEMA, UCI, and other monitoring agencies, shall assess the efficiency of upstream sediment controls and develop a program for management of sediment reaching the bay. The anticipated yearly cost of this program is estimated to be $200,000 (1978) per year. Funding for this program shall be provided by state, federal, or other sources and administered by the Department of Fish and Game.	Protects investment required for implementing PMRP and PEH.	For dredging impacts see Actions 32 and 33 above Annual cost estimated to be $200,000.	For associated mitigants see Actions 32 and 33 above.	X	X	X	
SEDIMENT AND EROSION CONTROL							
Action 37: Each appropriate jurisdiction within the Newport Bay watershed shall finance the development, adoption, and enforcement of a grading ordinance or regulations for those portions of its area in the Newport Bay watershed. These ordinances or regulations shall be at least as stringent as the SCAG areawide model grading ordinance as amended by NIWA, and shall be implemented within six months of the adoption of the 208 Plan.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan.				
		Approximately 17 additional inspectors required at an estimated additional annual cost of $680,000; personnel retraining required approximately every five years		X	X	X	
		Additional costs associated with stricter standards, reduced housing densities, landscape maintenance, fees, security bonds, etc.		X	X	X	
Action 38: The Regional Water Quality Control Board will set objectives for sediment discharge from agricultural lands and the Orange County Resource Conservation District shall develop and promote adoption of best management practices (BMPs) for the reduction of erosion consistent with these objectives. The Orange County Environmental Management Agency shall design and maintain its flood protection facilities to minimize sediment transport from sheet erosion of agricultural fields. (condensed wording)	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan.	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan Associated costs (undetermined).	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan.	X	X	X	
Action 39: The Orange County Environmental Management Agency shall, where proven reasonably practicable, provide dams for sediment and flow retention in the Lomas de Santiago. (condensed wording)	Reduction in sedimentation approximately 3 percent with two Hicks dams; 14 percent with all 13 dams Reduced flood hazards Benefits to biotic life in bay Increased employment opportunities for construction workers and planners.	Inundation hazard resulting from potential for dam failure or sudden release of water	Site analysis, planning, design, construction supervision, inspection, and maintenance				
		Potential effects on some biotic life resulting from reduced sediment/nutrients reaching Newport Bay	Planned studies to identify sediment sources, relative contribution, means of transport, and effective management. Should also investigate effects of various sedimentation rates on estuarine biota	X			
		Elimination of riparian communities resulting from construction of dams	Cost/benefit studies	X	X	X	
		Slight decrease in sediment for beach replenishment	Artificial augmentation	X			
		Potential disturbance/destruction of archaeological and/or paleontological sites during construction of dams, roads, storage yards, borrow pits, etc.	Preconstruction surveys, salvage, and monitoring	X	X	X	
		Probable significant change in visual character/incompatibility with surrounding areas	Minimize visibility Screening with vegetation compatible with existing surroundings Early consultation with landscape architect(s)	X	X	X	
		Slight increase in traffic congestion and air pollution if debris trucked to landfills		X			
		Increased erosion/sedimentation during construction	Observance of grading ordinances and regulations.	X			
		Temporary disturbance to wildlife resulting from construction activities.		X			
		Estimated total construction costs for the two Hicks dams – $4,208,000; annual operating and maintenance – $16,000. Construction costs for remaining 11 dams – $31,000,000.		X	X	X	
Action 40: Stabilize flood control channels in the San Diego Creek system. (condensed wording)	Potential effects on some biotic life resulting from reduced sediment/nutrients reaching Newport Bay Reduces sedimentation in Newport Bay Increased employment opportunities Potential increase in ground water recharge from some methods of stabilization Flood hazards reduced by increased flow velocities in channel (increased capacity).	Decrease/prevention of ground water recharge if channels lined	Eliminate use of liners in selected areas	X	X		
		Potential effects on some biotic life resulting from reduced sediment/nutrients reaching Newport Bay	For associated mitigants see Action 39 above				
		Slight decreases in sediment for beach replenishment	Artificial augmentation	X			
		Potential increase in flood hazard if velocity decreased (decreased capacity)					
		Slight potential disturbance/destruction of archaeological and/or paleontological sites	Preconstruction survey	X			
		Probable change in appearance depending on materials used	Vegetative screening	X	X		

No Growth-Inducing Impacts Anticipated

Action 35: On completion of the PMRP, the Department of Fish and Game shall, when sufficient data is available from the PEH or PMRP, improve the saltpan and subtidal areas. The schedule for attaining the final configuration is 10 to 20 years and the anticipated cost is approximately $10 million (1978). Funding shall be provided by state, federal, and/or other funding sources and administered by the Department of Fish and Game.	See Actions 32 and 33 above.	See Actions 32 and 33 above Estimated cost – $10 million.	See Actions 32 and 33 above.	X	X	X	
Action 36: The California Department of Fish and Game, with assistance provided by the OCEMA, UCI, and other monitoring agencies, shall assess the efficiency of upstream sediment controls and develop a program for management of sediment reaching the bay. The anticipated yearly cost of this program is estimated to be $200,000 (1978) per year. Funding for this program shall be provided by state, federal, or other sources and administered by the Department of Fish and Game.	Protects investment required for implementing PMRP and PEH.	For dredging impacts see Actions 32 and 33 above Annual cost estimated to be $200,000.	For associated mitigants see Actions 32 and 33 above.	X	X	X	
SEDIMENT AND EROSION CONTROL							
Action 37: Each appropriate jurisdiction within the Newport Bay watershed shall finance the development, adoption, and enforcement of a grading ordinance or regulations for those portions of its area in the Newport Bay watershed. These ordinances or regulations shall be at least as stringent as the SCAG areawide model grading ordinance as amended by NIWA, and shall be implemented within six months of the adoption of the 208 Plan.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan Approximately 17 additional inspectors required at an estimated additional annual cost of $680,000; personnel retraining required approximately every five years Additional costs associated with stricter standards, reduced housing densities, landscape maintenance, fees, security bonds, etc.	See Action 7 in Construction Activities section, Nonpoint Source Waste Management Plan.	X X	X X	X X	
Action 38: The Regional Water Quality Control Board will set objectives for sediment discharge from agricultural lands and the Orange County Resource Conservation District shall develop and promote adoption of best management practices (BMPs) for the reduction of erosion consistent with these objectives. The Orange County Environmental Management Agency shall design and maintain its flood protection facilities to minimize sediment transport from sheet erosion of agricultural fields. (condensed wording)	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan.	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan Associated costs (undetermined).	See Actions 11, 12, and 13 Agricultural Practices section, Nonpoint Source Waste Management Plan.	X	X	X	No Growth Inducing Impacts Anticipated
Action 39: The Orange County Environmental Management Agency shall, where proven reasonably practicable, provide dams for sediment and flow retention in the Lomas de Santiago. (condensed wording)	Reduction in sedimentation approximately 3 percent with two Hicks dams; 14 percent with all 13 dams Reduced flood hazards Benefits to biotic life in bay Increased employment opportunities for construction workers and planners.	Inundation hazard resulting from potential for dam failure or sudden release of water Potential effects on some biotic life resulting from reduced sediment/nutrients reaching Newport Bay Elimination of riparian communities resulting from construction of dams Slight decrease in sediment for beach replenishment Potential disturbance/ destruction of archaeological and/or paleontological sites during construction of dams, roads, storage yards, borrow pits, etc. Probable significant change in visual character/incompatibility with surrounding areas Slight increase in traffic congestion and air pollution if debris trucked to landfills Increased erosion/sedimentation during construction Temporary disturbance to wildlife resulting from construction activities. Estimated total construction costs for the two Hicks dams – $4,208,000; annual operating and maintenance – $16,000. Construction costs for remaining 11 dams – $31,000,000.	Site analysis, planning, design, construction supervision, inspection, and maintenance Planned studies to identify sediment sources, relative contribution, means of transport, and effective management. Should also investigate effects of various sedimentation rates on estuarine biota Cost/benefit studies Artificial augmentation Preconstruction surveys, salvage, and monitoring Minimize visibility Screening with vegetation compatible with existing surroundings Early consultation with landscape architect(s) Observance of grading ordinances and regulations.	X X X X X X X X X	X X X	X X	
Action 40: Stabilize flood control channels in the San Diego Creek system. (condensed wording)	Potential effects on some biotic life resulting from reduced sediment/nutrients reaching Newport Bay Reduces sedimentation in Newport Bay Increased employment opportunities Potential increase in ground water recharge from some methods of stabilization Flood hazards reduced by increased flow velocities in channel (increased capacity).	Decrease/prevention of ground water recharge if channels lined Potential effects on some biotic life resulting from reduced sediment/nutrients reaching Newport Bay Slight decreases in sediment for beach replenishment Potential increase in flood hazard if velocity decreased (decreased capacity) Slight potential disturbance/ destruction of archaeological and/or paleontological sites Probable change in appearance depending on materials used Increase erosion to storm channels from construction Associated, undetermined costs.	Eliminate use of liners in selected areas For associated mitigants see Action 39 above Artificial augmentation Preconstruction survey Vegetative screening Integration with surroundings Early consultation with landscape architect Observance of erosion control ordinances	X X X X X X	X X	X	
Action 41: Upstream improvements and administrative controls may not adequately control all of the sediment transported from the watershed. Therefore, the reach of San Diego Creek from Jamboree Road to the San Diego Freeway shall be maintained in such a manner so as to maximize its erosion control potential consistent with its intended purpose of flood control protection.	Potential effects on some biotic life resulting from reduced sediments/nutrients reaching Newport Bay Reduced sedimentation of Newport Bay Increased employment opportunities.	Potential effects on some biotic life resulting from reduced sediments/nutrients reaching Newport Bay Potential change to areas' visual character Increased erosion/sedimentation during construction Slight decreases in sediment for beach replenishment Associated costs in excess of $200,000.	For associated mitigants see Actions 40 and 41 above Screening with vegetation compatible with existing surroundings Observance of grading ordinances and regulations Artificial augmentation.	X X X X	X	X	
Action 42: As an additional element of the continuing action program, NIWA shall assess the need and/or feasibility of downstream desilting basins. The following items shall be addressed in this assessment: A. The need for a downstream sedimentation basin(s) with all other programs being implemented and in place (e.g., grading ordinances, BMPs, in-channel sediment management). B. Identify alternative sites for downstream sediment control basins. Sites "A" and "B", identified in the Phase II Subtask 5 report shall also be included as alternative sites. C. The effectiveness of each site in sediment removal at various flow rates shall be assessed. D. The costs of construction and maintenance of each alternative site shall be evaluated. These costs shall include not only the direct costs of construction and maintenance, but also the indirect costs to both the surrounding communities and private interests as a result of development of each site.	← No direct impacts anticipated →						

Recommended Action	Beneficial Impacts	Adverse Impacts	Mitigation Measures	Unavoidable Adverse Impacts	Short-Term Use/Long-Term Productivity	Irreversible Commitment of Resources Environmental Changes	Growth Inducing Impacts
SURFACE SANITATION							
Action 43: At the expiration of existing street sweeping contracts, or as existing mechanical equipment is retired, each appropriate jurisdiction shall obtain vacuum or combination vacuum/mechanical street sweeping equipment. The final mix of mechanical and vacuum equipment shall provide a balanced street cleaning program. The optimum mix of equipment shall be attained no later than eight years after specific guidelines are established in the 208 Plan for the use of various types of equipment in achieving water quality goals. The cost of this equipment will vary by jurisdiction, depending on the amount of vacuum equipment needed and the equipment chosen. Each jurisdiction shall finance these costs through local funding sources.	Benefits accruing to surface water runoff and visual character from containment of debris and potential pollutants Increased efficiency in the removal of fine particulates resulting in less emissions to air Generation of employment opportunities Maintenance costs reduced with utilization of new sweeping machines.	Increased localized noise levels Associated costs (minor).	Implementation of noise abatement measures.	X X	 X	 X	
Action 44: Each jurisdiction shall modify existing street sweeping practices to attain the greatest water quality benefit based on season, refuse collection day, tree trimming operations (e.g., slower sweeping speeds, double passes where needed). This action shall commence immediately upon adoption of the 208 Plan. Costs are expected to be minimal and shall be financed by the implementing jurisdictions.	Improvements in water quality resulting from: – intensified sweeping efforts during fall – scheduling of sweeping activity to correspond with least interference – coordination with refuse collection – establishment of parking restrictions Coordination with tree trimming activities reducing obstructions previously preventing debris removal close to curb Visual character improvement in swept areas Generation of employment opportunities.	Increases in noise levels from more frequent street cleaning Increased air pollutant emissions and energy consumption from greater sweeper VMT Public inconvenience from parking restrictions Associated costs with increased street sweeping frequency.	Implementation of noise abatement measures Implementation of emission control devices.	X X X X	 X	 X	
Action 45: Each jurisdiction shall improve its streets within the NIWA area with curb and gutter, where needed, to facilitate removal of significant street pollutants. Costs will vary by jurisdiction. Financing of these costs shall be provided through local funding sources or as a condition of development.	Facilitates removal of street debris and reduces surface water contamination Improves drainage and reduces potential problems associated with stagnating pools of water Generation of employment opportunities.	Construction-induced erosion, noise disturbance, and traffic congestion Consumption of natural resources, including energy Associated construction costs (undetermined).	Limit construction to dry months; institute noise abatement measures; schedule construction during off-peak hours.	X X X	 X X	 X X	
Action 46: Each jurisdiction shall identify areas within the watershed which are recurringly used as illegal dump sites and increase enforcement of applicable regulations. Costs for this activity will vary by jurisdiction and will be provided through local funding sources.	Improvement in surface water quality and reduction in ground water contamination Public health risks potentially reduced Improvement in visual character Property values in areas adjacent to dump sites preserved Generation of employment opportunities.	Increased demand for capacity at legal disposal sites Associated costs of enforcement (undetermined).	Encourage reuse of materials; energy recovery from discarded material.	X X	 X	 X	
VESSEL WASTE MANAGEMENT							
Action 47: The Orange County Sheriff shall enforce existing laws requiring marinas to have accessible sewage pumpout capability. This activity shall commence immediately upon adoption of the 208 Plan. Costs of implementation are anticipated to be minimal and shall be financed by the County of Orange or its contractors.	Reduction in the quantity of discharged human wastes and garbage providing benefits to water quality Public health hazards from exposure to pathogenic organisms reduced Reduced unsafe conditions (explosion) in holding tanks by utilization of pumpout facilities.	Sewage pumpout facilities visually unappealing Associated costs (undetermined).	Construction with a protective covering to disguise facility.	 X	 X	 X	
Action 48: The United States Environmental Protection Agency shall support development of a device for in-the-water hull cleaning of pleasure craft which incorporates a retaining bag to collect the material removed. When these devices are made available and proven effective and economical, the Regional Water Quality Control Board shall require their use for in-the-water hull cleaning. It is estimated that strict enforcement of these regulations will cost $15,000 (1978) per year, to be borne by the State of California.	Reduced discharge of heavy metals and organic material to Newport Bay Slows rate of trace metal buildup Public health benefits by lessening contamination of edible shellfish Visual character of bay improved Potential employment benefits for enforcement activities.	Enforcement costs estimated at $15,000 per year Accrual of costs to boat owners (e.g., purchase of retaining bags).		X X	X X	X X	
Action 49: The City of Newport Beach and the County of Orange shall amend the existing maintenance agreement and increase its funding to provide for emergency cleanup of lower Newport Bay.	Provides for rapid cleanup of spills; reduces potential for adverse impact on marine water quality and habitats Reduction in amounts of floatable solids; improved water safety for water contact activities Bay's visual character improved	Increases funds from existing $15,000 total to $20,000; jointly financed by County of Orange and city of Newport Beach.		X	X	X	
Action 50: The Southern California Association of Governments shall develop and implement public education programs designed to reduce vessel-related pollution.	Potential water quality improvements of bay (see Actions 47, 48, and 49).	Range of estimated program costs $34,300 to $52,300; funded by Section 208 (PL-92-500).		X	X	X	
Action 51: Working with the EPA, U.S. Coast Guard, State Water Resources Control Board, Orange County Sheriff and any other appropriate governments, NIWA shall define the duties and authorities of such entities, to enforce existing state and local regulations in Newport Bay, and to cooperatively develop an enforcement program. Such programs shall thereafter be available for use by the implementing and enforcing entities as well as for use in developing the public educational programs.	See Actions 47, 48, and 49.	Associated costs (undetermined).		X	X	X	
Action 52: Determine the source(s) of bacterial contamination to upper Newport Bay and develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 53: Determine the source(s) and impacts of the high nutrient levels entering upper Newport Bay via San Diego Creek and, where needed, develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 54: Assess the impacts of pollutants entering upper Newport Bay via storm drains and the Santa Ana-Delhi Channel and, where needed, develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 55: Task 2-3: Ongoing UCI continuing action study: A. Water quality monitoring in the major channels shall be performed to determine the pollutant inputs to upper Newport Bay. B. An intensive water quality survey shall be performed to determine detailed information regarding run off quality and quantity from major land use types. C. A special sediment transport analysis shall be performed to determine the amount of sediment which is conveyed from the watershed into upper Newport Bay.	← No direct impacts anticipated →						

Growth Inducing Impacts Are Anticipated ON

Recommended Action	Beneficial Impacts	Adverse Impacts	Mitigation Measures	Unavoidable Adverse Impacts	Short-Term Use Long-Term Productivity	Irreversible Commitment of Resources Environmental Changes	Growth-Inducing Impacts
SURFACE SANITATION							
Action 43: At the expiration of existing street sweeping contracts, or as existing mechanical equipment is retired, each appropriate jurisdiction shall obtain vacuum or combination vacuum/mechanical street sweeping equipment. The final mix of mechanical and vacuum equipment shall provide a balanced street cleaning program. The optimum mix of equipment shall be attained no later than eight years after specific guidelines are established in the 208 Plan for the use of various types of equipment in achieving water quality goals. The cost of this equipment will vary by jurisdiction, depending on the amount of vacuum equipment needed and the equipment chosen. Each jurisdiction shall finance these costs through local funding sources.	Benefits accruing to surface water runoff and visual character from containment of debris and potential pollutants Increased efficiency in the removal of fine particulates resulting in less emissions to air Generation of employment opportunities Maintenance costs reduced with utilization of new sweeping machines.	Increased localized noise levels Associated costs (minor).	Implementation of noise abatement measures.	X X	 X	 X	
Action 44: Each jurisdiction shall modify existing street sweeping practices to attain the greatest water quality benefit based on season, refuse collection day, tree trimming operations (e.g., slower sweeping speeds, double passes where needed). This action shall commence immediately upon adoption of the 208 Plan. Costs are expected to be minimal and shall be financed by the implementing jurisdictions.	Improvements in water quality resulting from: – intensified sweeping efforts during fall – scheduling of sweeping activity to correspond with least interference – coordination with refuse collection – establishment of parking restrictions Coordination with tree trimming activities reducing obstructions previously preventing debris removal close to curb Visual character improvement in swept areas Generation of employment opportunities.	Increases in noise levels from more frequent street cleaning Increased air pollutant emissions and energy consumption from greater sweeper VMT Public inconvenience from parking restrictions Associated costs with increased street sweeping frequency.	Implementation of noise abatement measures Implementation of emission control devices.	X X X X	 X	 X	
Action 45: Each jurisdiction shall improve its streets within the NIWA area with curb and gutter, where needed, to facilitate removal of significant street pollutants. Costs will vary by jurisdiction. Financing of these costs shall be provided through local funding sources or as a condition of development.	Facilitates removal of street debris and reduces surface water contamination Improves drainage and reduces potential problems associated with stagnating pools of water Generation of employment opportunities.	Construction-induced erosion, noise disturbance, and traffic congestion Consumption of natural resources, including energy Associated construction costs (undetermined).	Limit construction to dry months; institute noise abatement measures; schedule construction during off-peak hours.	X X X	 X X	 X X	
Action 46: Each jurisdiction shall identify areas within the watershed which are recurringly used as illegal dump sites and increase enforcement of applicable regulations. Costs for this activity will vary by jurisdiction and will be provided through local funding sources.	Improvement in surface water quality and reduction in ground water contamination Public health risks potentially reduced Improvement in visual character Property values in areas adjacent to dump sites preserved Generation of employment opportunities.	Increased demand for capacity at legal disposal sites Associated costs of enforcement (undetermined).	Encourage reuse of materials; energy recovery from discarded material.	X X	 X	 X	
VESSEL WASTE MANAGEMENT Action 47: The Orange County Sheriff shall enforce existing laws requiring marinas to have accessible sewage pumpout capability. This activity shall commence immediately upon adoption of the 208 Plan. Costs of implementation are anticipated to be minimal and shall be financed by the County of Orange or its contractors.	Reduction in the quantity of discharged human wastes and garbage providing benefits to water quality Public health hazards from exposure to pathogenic organisms reduced Reduced unsafe conditions (explosion) in holding tanks by utilization of pumpout facilities.	Sewage pumpout facilities visually unappealing Associated costs (undetermined).	Construction with a protective covering to disguise facility.	X	X	X	
Action 48: The United States Environmental Protection Agency shall support development of a device for in-the-water hull cleaning of pleasure craft which incorporates a retaining bag to collect the material removed. When these devices are made available and proven effective and economical, the Regional Water Quality Control Board shall require their use for in-the-water hull cleaning. It is estimated that strict enforcement of these regulations will cost $15,000 (1978) per year, to be borne by the State of California.	Reduced discharge of heavy metals and organic material to Newport Bay Slows rate of trace metal buildup Public health benefits by lessening contamination of edible shellfish Visual character of bay improved Potential employment benefits for enforcement activities.	Enforcement costs estimated at $15,000 per year Accrual of costs to boat owners (e.g., purchase of retaining bags).		X X	X X	X X	
Action 49: The City of Newport Beach and the County of Orange shall amend the existing maintenance agreement and increase its funding to provide for emergency cleanup of lower Newport Bay.	Provides for rapid cleanup of spills; reduces potential for adverse impact on marine water quality and habitats Reduction in amounts of floatable solids; improved water safety for water contact activities Bay's visual character improved	Increases funds from existing $15,000 total to $20,000; jointly financed by County of Orange and city of Newport Beach.		X	X	X	
Action 50: The Southern California Association of Governments shall develop and implement public education programs designed to reduce vessel-related pollution.	Potential water quality improvements of bay (see Actions 47, 48, and 49).	Range of estimated program costs $34,300 to $52,300; funded by Section 208 (PL-92-500).		X	X	X	
Action 51: Working with the EPA, U.S. Coast Guard, State Water Resources Control Board, Orange County Sheriff and any other appropriate governments, NIWA shall define the duties and authorities of such entities, to enforce existing state and local regulations in Newport Bay, and to cooperatively develop an enforcement program. Such programs shall thereafter be available for use by the implementing and enforcing entities as well as for use in developing the public educational programs.	See Actions 47, 48, and 49.	Associated costs (undetermined).		X	X	X	
Action 52: Determine the source(s) of bacterial contamination to upper Newport Bay and develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 53: Determine the source(s) and impacts of the high nutrient levels entering upper Newport Bay via San Diego Creek and, where needed, develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 54: Assess the impacts of pollutants entering upper Newport Bay via	← No direct impacts anticipated →						

No Growth Inducing Impacts Anticipated

jurisdiction shall obtain vacuum or combination vacuum/mechanical street sweeping equipment. The final mix of mechanical and vacuum equipment shall provide a balanced street cleaning program. The optimum mix of equipment shall be attained no later than eight years after specific guidelines are established in the 208 Plan for the use of various types of equipment in achieving water quality goals. The cost of this equipment will vary by jurisdiction, depending on the amount of vacuum equipment needed and the equipment chosen. Each jurisdiction shall finance these costs through local funding sources.	Increased efficiency in the removal of fine particulates resulting in less emissions to air Generation of employment opportunities Maintenance costs reduced with utilization of new sweeping machines.						
Action 44: Each jurisdiction shall modify existing street sweeping practices to attain the greatest water quality benefit based on season, refuse collection day, tree trimming operations (e.g., slower sweeping speeds, double passes where needed). This action shall commence immediately upon adoption of the 208 Plan. Costs are expected to be minimal and shall be financed by the implementing jurisdictions.	Improvements in water quality resulting from: – intensified sweeping efforts during fall – scheduling of sweeping activity to correspond with least interference – coordination with refuse collection – establishment of parking restrictions Coordination with tree trimming activities reducing obstructions previously preventing debris removal close to curb Visual character improvement in swept areas Generation of employment opportunities.	Increases in noise levels from more frequent street cleaning Increased air pollutant emissions and energy consumption from greater sweeper VMT Public inconvenience from parking restrictions Associated costs with increased street sweeping frequency.	Implementation of noise abatement measures Implementation of emission control devices.	X X X X	 X	 X	
Action 45: Each jurisdiction shall improve its streets within the NIWA area with curb and gutter, where needed, to facilitate removal of significant street pollutants. Costs will vary by jurisdiction. Financing of these costs shall be provided through local funding sources or as a condition of development.	Facilitates removal of street debris and reduces surface water contamination Improves drainage and reduces potential problems associated with stagnating pools of water Generation of employment opportunities.	Construction-induced erosion, noise disturbance, and traffic congestion Consumption of natural resources, including energy Associated construction costs (undetermined).	Limit construction to dry months; institute noise abatement measures; schedule construction during off-peak hours.	X X X	 X X	 X X	
Action 46: Each jurisdiction shall identify areas within the watershed which are recurringly used as illegal dump sites and increase enforcement of applicable regulations. Costs for this activity will vary by jurisdiction and will be provided through local funding sources.	Improvement in surface water quality and reduction in ground water contamination Public health risks potentially reduced Improvement in visual character Property values in areas adjacent to dump sites preserved Generation of employment opportunities.	Increased demand for capacity at legal disposal sites Associated costs of enforcement (undetermined).	Encourage reuse of materials; energy recovery from discarded material.	X X	 X	 X	
VESSEL WASTE MANAGEMENT Action 47: The Orange County Sheriff shall enforce existing laws requiring marinas to have accessible sewage pumpout capability. This activity shall commence immediately upon adoption of the 208 Plan. Costs of implementation are anticipated to be minimal and shall be financed by the County of Orange or its contractors.	Reduction in the quantity of discharged human wastes and garbage providing benefits to water quality Public health hazards from exposure to pathogenic organisms reduced Reduced unsafe conditions (explosion) in holding tanks by utilization of pumpout facilities.	Sewage pumpout facilities visually unappealing Associated costs (undetermined).	Construction with a protective covering to disguise facility.	 X	 X	 X	No Growth Inducing Impacts Anticipated
Action 48: The United States Environmental Protection Agency shall support development of a device for in-the-water hull cleaning of pleasure craft which incorporates a retaining bag to collect the material removed. When these devices are made available and proven effective and economical, the Regional Water Quality Control Board shall require their use for in-the-water hull cleaning. It is estimated that strict enforcement of these regulations will cost $15,000 (1978) per year, to be borne by the State of California.	Reduced discharge of heavy metals and organic material to Newport Bay Slows rate of trace metal buildup Public health benefits by lessening contamination of edible shellfish Visual character of bay improved Potential employment benefits for enforcement activities.	Enforcement costs estimated at $15,000 per year Accrual of costs to boat owners (e.g., purchase of retaining bags).		X X	X X	X X	
Action 49: The City of Newport Beach and the County of Orange shall amend the existing maintenance agreement and increase its funding to provide for emergency cleanup of lower Newport Bay.	Provides for rapid cleanup of spills; reduces potential for adverse impact on marine water quality and habitats Reduction in amounts of floatable solids; improved water safety for water contact activities Bay's visual character improved	Increases funds from existing $15,000 total to $20,000; jointly financed by County of Orange and city of Newport Beach.		X	X	X	
Action 50: The Southern California Association of Governments shall develop and implement public education programs designed to reduce vessel-related pollution.	Potential water quality improvements of bay (see Actions 47, 48, and 49).	Range of estimated program costs $34,300 to $52,300; funded by Section 208 (PL-92-500).		X	X	X	
Action 51: Working with the EPA, U.S. Coast Guard, State Water Resources Control Board, Orange County Sheriff and any other appropriate governments, NIWA shall define the duties and authorities of such entities, to enforce existing state and local regulations in Newport Bay, and to cooperatively develop an enforcement program. Such programs shall thereafter be available for use by the implementing and enforcing entities as well as for use in developing the public educational programs.	See Actions 47, 48, and 49.	Associated costs (undetermined).		X	X	X	
Action 52: Determine the source(s) of bacterial contamination to upper Newport Bay and develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 53: Determine the source(s) and impacts of the high nutrient levels entering upper Newport Bay via San Diego Creek and, where needed, develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 54: Assess the impacts of pollutants entering upper Newport Bay via storm drains and the Santa Ana-Delhi Channel and, where needed, develop appropriate mitigation measures.	← No direct impacts anticipated →						
Action 55: Task 2-3: Ongoing UCI continuing action study: A. Water quality monitoring in the major channels shall be performed to determine the pollutant inputs to upper Newport Bay. B. An intensive water quality survey shall be performed to determine detailed information regarding runoff quality and quantity from major land use types. C. A special sediment transport analysis shall be performed to determine the amount of sediment which is carried from the watershed into upper Newport Bay.	← No direct impacts anticipated →						

SECTION I

Project Description

Project Description

The project for which this EIR has been prepared is the draft 208 Areawide Waste Treatment Management Plan for the South Coast Planning Area. The preparation of the plan is required by section 208 of the Federal Water Pollution Control Act of 1972 (Public Law 92-500) as amended by the Clean Water Act of 1977 (Public Law 95-217). The overall goal of the draft 208 Plan is to coordinate the waste treatment activities of federal, state, and local agencies so that the water quality goals of the Act relate to providing for "the protection and propagation of fish, shellfish, and wildlife and . . . for recreation in and on the water . . . by July 1, 1983" can be achieved (Section 101 (a) (2)). The South Coast Planning Area is shown in Figure I-1.

In preparing the draft 208 Plan, a distinction has been made between policies and actions necessary to achieve the 1983 water quality goal stated in federal legislation. Policies establish a context and a set of guiding principles for the development and implementation of the draft 208 Plan. Actions represent the medium through which the water quality goals are to be achieved, consistent with the stated areawide policies.

Policies and actions in the draft 208 Plan have been grouped into five elements describing the types of water quality problems and issues that each addresses. The five elements are:

- Nonpoint Source Waste Management
- Municipal and Industrial Waste Management
- Water Conservation and Reuse
- Residual Waste Management
- Integrated Control Plans—Priority Program for Newport Bay.

A total of 55 actions grouped in sections, e.g., Spills of Hazardous Substances, within each of the five plan elements are proposed in the draft 208 Plan. In addition, nine policies have been developed to guide the implementation of these actions. These policies are described under a separate heading entitled Implementation Plan. No actions are recommended for these policies since they relate only to the implementation of the draft 208 Plan.

Descriptions of all policies and actions are included in the following pages of this section. The environmental impacts of the actions are described in Section IV, Environmental Evaluation of draft 208 Plan Actions.

NONPOINT SOURCE WASTE MANAGEMENT PLAN

General Policy: Local governments shall be encouraged, in accordance with areawide guidelines, to minimize nonpoint source pollution resulting from land management practices, recognizing that environmentally sensitive areas need protection to prevent water quality problems and protect beneficial uses, including natural ecosystems.

SPILLS OF HAZARDOUS SUBSTANCES

Policy: See general policy.

Action 1: Develop and implement a comprehensive areawide-local contingency plan.

Action 2: Implement specific subregional actions to improve containment and cleanup procedures for hazardous substance spills as described in Table IV-1 and as recommended by participating agencies.

URBAN NONPOINT SOURCE WASTES

Policy: See general policy.

Action 3: Existing street sweeping programs (prior to passage of Proposition 13) should be continued with consideration given to increasing their effectiveness in reducing wasteloads to receiving waters.

Action 4: Maintain current litter control programs.

URBAN AND INDUSTRIAL STORMWATER SYSTEM NEEDS

Policy: Measures to reduce runoff volume and peak flows in new developments shall be supported where practicable to maintain a more native riparian habitat and to minimize the need for stream channelization.

Policy: Operational procedures in stormwater systems management shall be supported which protect water quality and encourage maximum beneficial use of stormwater to the extent economically feasible.

Action 5: Maintain current catch basin, inlet basin and storm drain cleaning programs with consideration given to increasing the effectiveness of these programs.

Action 6: Emphasize reduction of runoff volume and peak flow rates as mitigation measures in environmental impact reports (EIRs) for new developments.

CONSTRUCTION ACTIVITIES

Policy: In locations where current management practices are inadequate for erosion control, more effective control programs to minimize storm-related impacts on receiving waters, which impacts result from transport of sediment from construction sites, shall be implemented and stricter enforcement of grading ordinances shall be encouraged. Reduction of grading shall be encouraged where consistent with public safety.

FIGURE I-1

SOUTH COAST PLANNING AREA

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

KERN COUNTY
LOS ANGELES COUNTY

SANTA BARBARA COUNTY
VENTURA COUNTY

LOS ANGELES COUNTY
VENTURA COUNTY

LOS ANGELES COUNTY
SAN BERNARDINO COUNTY

SAN BERNARDINO COUNTY
RIVERSIDE COUNTY

LOS ANGELES COUNTY
ORANGE COUNTY

ORANGE COUNTY
RIVERSIDE COUNTY

RIVERSIDE COUNTY
SAN DIEGO COUNTY

VENTURA
OXNARD
THOUSAND OAKS
NEWHALL
SAN FERNANDO
PASADENA
LOS ANGELES
SANTA MONICA
DOWNEY
LONG BEACH
SANTA ANA
IRVINE
NEWPORT BEACH
SAN CLEMENTE
POMONA
ONTARIO
SAN BERNARDINO
RIVERSIDE
BEAUMONT
BIG BEAR
HEMET

SCALE
5 0 5 10 MILES

SOUTH COAST PLANNING AREA BOUNDARY

DMJM Daniel, Mann, Johnson, & Mendenhall

OCTOBER 1978

Action 7: Strengthen existing erosion and grading control ordinance by (1) adopting specific ordinances for areas requiring water quality control, which are to be at least as effective as the Model Erosion and Sedimentation Control Measures for Grading Ordinances guidelines in Appendix B of the draft 208 Plan or (2) adopting the Model Erosion Control Ordinance contained in Appendix C of the draft 208 Plan.

Action 8: Stringently enforce erosion and grading control ordinances in areas identified in Table IV-3.

Action 9: Distribute homeowner's guides for new developments containing information on erosion control and prevention of landsliding.

Action 10: Conduct special education and training programs in erosion and sediment control application for the construction industry and local government.

AGRICULTURAL PRACTICES

Policy: Best management practices[1] for control of water quality of agricultural return flows, based on economic and environmental considerations, shall be implemented where analysis shows that water quality and beneficial uses would be protected.

Action 11: Develop and adopt an ordinance that requires Resource Conservation Plans for all areas in agricultural use.

Action 12: Expand Resource Conservation Plans to be consistent with draft 208 Plan Best Management Practices for agriculture.

Action 13: Develop long-range Best Management Practices and implementation strategies for dairy wastes in the Chino Valley.

SALINE WATER INTRUSION

Policy: Current ground water basin management practices that are controlling saltwater intrusion in coastal areas shall be maintained, and additional practices, where necessary, shall be encouraged.

Action 14: Maintain existing management programs for control of saline water intrusion.

OTHER MISCELLANEOUS SOURCES

Policy: Additional research on aerial fallout impacts on water quality shall be supported.

Policy: Management of nonpoint source pollution from vegetative management shall be supported where known water quality problems have occurred.

Policy: Preventive management strategies for mining-related nonpoint sources of pollution to protect water quality shall be supported.

No actions are proposed at this time.

---

[1] Best Management Practices, as defined by Federal regulations (40 CFR 130.2) are "a practice, or combination of practices, that is determined by a State (or designated areawide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals."

MUNICIPAL AND INDUSTRIAL WASTE MANAGEMENT PLAN

CONSISTENCY OF MUNICIPAL WASTEWATER FACILITIES WITH THE AREAWIDE GROWTH PROJECTION

Policy: Municipal[1] wastewater collection and treatment facilities shall be planned, designed and constructed based on SCAG's adopted growth forecast and water conservation policies. Consistency of wastewater facilities with SCAG's growth forecast shall be ensured through the location and size of the facilities and through the timing of their use. Phased and modular construction of treatment plants shall be encouraged.

Policy: In locations where municipal[1] wastewater facilities are approaching capacity, local governments shall, consistent with local and regional growth policies and water quality protection, be encouraged to actively seek funds for capacity increases, to develop contingency plans for wastewater managment, and to restrict future development until sufficient capacity, or approved alternative waste treatment systems, are provided.

Action 15: Plan, design and construct the facilities necessary to meet the municipal waste treatment system needs shown in the 1978/1979 SWRCB Clean Water Grant Project Priority List, consistent with the wastewater flow forecast shown in Table IV-6A.

Action 16: Prepare the 1979-1980 Clean Water Grant Project Priority List to provide for funding of the municipal facilities in the South Coast Planning Area on a schedule consistent with the wastewater flow forecasts shown in Table IV-6A and the dates indicated on Table IV-6B.

Action 17: Revise NPDES permits to ensure that permitted wastewater flows are consistent with the flows shown in Table IV-6A for the time period of the permit.

WASTEWATER FACILITIES PLANNING AND AIR QUALITY MANAGEMENT COORDINATION

Policy: Municipal[1] wastewater facilities planning shall be consistent with the adopted Air Quality Management Plan, based on the adopted growth forecast policy and measures for attaining and maintaining ambient air quality standards.

Action 18: Plan, design and construct wastewater facilities consistent with the Air Quality Management Plan (AQMP).

Action 19: Assist in the implementation of the Air Quality Management Plan.

Action 20: In the preparation of Environmental Impact Reports and Statements (EIRs/EISs) for municipal wastewater facilities, specify as mitigation measures for air quality impacts those tactics and strategies adopted as part of the Air Quality Management Plan.

---

[1]Muncipal facilities are identical to publicly owned treatment works as defined by federal regulations, and do not include discrete industrial dischargers.

INDUSTRIAL PRETREATMENT AND OCEAN DISCHARGE

Policy: The flexibility of management agencies to choose among various pretreatment programs, which result in compliance with discharge requirements, shall be encouraged.

Policy: Treatment levels for deep ocean discharges shall be supported which protect, enhance, and restore marine water quality and which assure balanced, indigenous, populations of marine life. Wastewater reclamation and reuse shall be encouraged as an alternative to wastewater discharge to the marine environment.

No actions are proposed at this time.

UNSEWERED AREAS

Policy: In rural areas, alternatives to centralized wastewater treatment systems shall be encouraged, consistent with protection of ground water quality and public health.

Action 21: Plan, design and construct package treatment plants for beachfront Malibu and part of the Malibu civic center area.

Action 22: Create on-site Waste Water Management Zones in the Malibu/Topanga Area pursuant to the Behr Bill (SB 430).

Action 23: Develop and implement septic tank management approaches for each on-site waste management zone.

Action 24: Revise the fiscal year 1978-1979 Clean Water Grant Project priority listing for the Malibu area wastewater facilities.

WATER CONSERVATION AND REUSE

General Policy: Appropriate changes in institutional, legal and financial arrangements shall be encouraged to increase the potential for wastewater reuse, taking into account public health, environmental, and socio-economic constraints, and the cost of imported waters.

General Policy: Appropriate existing or revised monitoring, and regulatory requirements, shall be supported to increase the potential for wastewater reuse when consistent with public health, social, economic, and environmental constraints. Increased research on environmental and health constraints shall be encouraged.

General Policy: Wastewater and water supply systems development shall encourage water conservation and reuse as a method for augmenting the limited fresh water supply, taking into account public health, environmental, socio-economic, and water rights constraints.

STORMWATER CONSERVATION

Policy: See general policies.

Action 25: Maintain current stormwater conservation programs.

WATER USE CONSERVATION

Policy: See general policies.

No actions recommended at this time.

WASTEWATER RECLAMATION AND REUSE

Policy: See general policies.

Action 26: Develop a long-range plan and implementation strategy to increase wastewater reuse in Los Angeles and Orange Counties through the Los Angeles/Orange Counties regional reuse study.

Action 27: Adopt the 208 Plan water conservation and reuse policies as the policy framework for the Los Angeles/Orange County Reuse Study.

RESIDUAL WASTE MANAGEMENT PLAN

WASTEWATER SLUDGE MANAGEMENT

Policy: The regional sludge management strategy that shall be supported is that which has the least environmental, social, economic, and resource costs, considered jointly; measures to increase energy recovery or other beneficial uses of sludge shall be encouraged.

Action 28: Develop a long-range wastewater sludge management plan and implementation strategy for the Los Angeles/Orange County Metropolitan Area (LA/OMA Project).

OTHER SOLID AND NONSEWERABLE LIQUID WASTES

Policy: Residual waste management programs—including disposal, resource/energy recovery, waste-reduction, and recycling—shall be consistent with water quality goals.

Action 29: Develop and implement a strategy for permanently closing the Stringfellow Class I hazardous disposal site.

Action 30: Suspend the granting of waste-disposal permit exemptions by local solid waste enforcement agencies for Class III landfills.

Action 31: Require ground water quality monitoring and other monitoring program improvements at Class III sanitary landfills.

PRIORITY PROGRAM FOR NEWPORT BAY

HABITAT RESTORATION

Policy: The wildlife habitat in the Upper Newport Bay Ecological Reserve shall be enhanced and maintained in such a manner as to optimize its function as a coastal wetland resource.

Policy: The sediments not contained by upstream controls and facilities shall be managed in such a manner as to result in the least environmental damage practicable.

Action 32: The California Department of Fish and Game has commenced implementation of the Pilot Marsh Restoration Project (PMRP). This project shall be completed by January 1980. The estimated cost for this project is $540,000. Funds shall be provided by the State of California and shall be administered by the Department of Fish and Game.

Action 33: On completion of the PMRP the Department of Fish and Game shall establish a Protected Experimental Habitat (PEH) at a cost of approximately $2.5 million (1978).

Action 34: On completion of the PMRP the Department of Fish and Game shall improve the lower portion of the Upper Bay to enhance wildlife habitat, increase circulation and decrease stagnation.

Action 35: On completion of the PMRP the Department of Fish and Game shall, when sufficient data is available from the PEH or PMRP, improve the salt pan and subtidal areas. The schedule for attaining the final configuration is ten to twenty years and the anticipated cost is approximately $10 million (1978). Funding shall be provided by state, federal, and/or other funding sources and administered by the Department of Fish and Game.

Action 36: The California Department of Fish and Game, with assistance provided by the OCEMA, UCI and other monitoring agencies, shall assess the efficiency of upstream sediment controls and develop a program for management of sediment reaching the Bay. The anticipated yearly cost of this program is estimated to be $200,000 (1978) per year. Funding for this program shall be provided by state, federal, or other sources and administered by the Department of Fish and Game.

SEDIMENT AND EROSION CONTROLS

Policy: Upper Newport Bay shall be protected from the influx of sediment to the maximum extent reasonably practicable by:

(1) effective and enforceable administrative and legal actions emphasizing source controls,

(2) effective and environmentally acceptable land management practices, and

(3) the construction and maintenance of effective and environmentally acceptable facilities above Jamboree Boulevard.

Such actions shall be accomplished by the appropriate jurisdictions within the watershed within funding capabilities. State and Federal funding sources shall be sought where they may effect acceleration of implementation of corrective and preventive control measures. The Department of Fish and Game shall, as a part of the continuing action program, assess the efficiency of these upstream sediment controls and shall develop a program for management of sediment reaching the bay consistent with their findings.

Action 37: Each appropriate jurisdiction within the Newport Bay watershed shall finance the development, adoption and enforcement of a grading ordinance or regulations for those portions of its area in the Newport Bay watershed. These ordinances or regulations shall be at least as stringent as the SCAG areawide model grading ordinance as amended by NIWA, and shall be implemented within six months of the adoption of the 208 Plan.

Action 38: The Regional Water Quality Control Board will set objectives for sediment discharge from agricultural lands and the Orange County Resources Conservation District shall develop and promote adoption of best management practices (BMPs) for the reduction of erosion consistent with these objectives. The Orange County Environmental Management Agency shall design and maintain its flood protection facilities to minimize sediment transport from sheet erosion of agricultural fields. (condensed wording)

Action 39: The Orange County Environmental Management Agency shall, where proven reasonably practicable, provide dams for sediment and flow retention in the Lomas de Santiago. (condensed wording)

Action 40: Stabilize flood control channels in the San Diego Creek system. (condensed wording)

Action 41: Upstream improvements and administrative controls may not adequately control all of the sediment transported from the watershed. Therefore, the reach of San Diego Creek from Jamboree Road to the San Diego Freeway shall be maintained in such a manner so as to maximize its erosion control potential consistent with its intended purpose of flood control protection.

Action 42: As an additional element of the continuing action program, NIWA shall assess the need and/or feasibility of downstream desilting basins. The following items shall be addressed in this assessment:

A. The need for a downstream sedimentation basin(s) with all other programs being implemented and in place, e.g., grading ordinances, BMPs, in-channel sediment management.

B. Identify alternative sites for downstream sediment control basins. Sites A and B, identified in the Phase II subtask 5 report, shall also be included as alternative sites.

C. The effectiveness of each site in sediment removal at various flow rates shall be assessed.

D. The costs of construction and maintenance of each alternative site shall be evaluated. These costs shall include not only the direct costs of construction and maintenance, but also the indirect costs to both the surrounding communities and private interests as a result of development of each site.

SURFACE SANITATION

Policy: Upper Newport Bay and its tributaries shall be protected to the maximum extent practicable from surface pollutants and debris through effective and enforceable actions by all jurisdictions within the watershed.

Action 43: At the expiration of existing street sweeping contracts, or as existing mechanical equipment is retired, each appropriate jurisdiction shall obtain vacuum or combination vacuum/mechanical street sweeping equipment. The final mix of mechanical and vacuum equipment shall provide a balanced street cleaning program. The optimum mix of equipment shall be attained no later than eight years after specific guidelines are established in the 208 Plan for the use of various types of equipment in achieving water quality goals. The cost of this equipment will vary by jurisdiction, depending on the amount of vacuum equipment needed and the equipment chosen. Each jurisdiction shall finance these costs through local funding sources.

Action 44: Each jurisdiction shall modify existing street sweeping practices to attain the greatest water quality benefit based on season, refuse collection day, and tree trimming operations, e.g., slower sweeping speeds and double passes where needed. This action shall commence immediately upon adoption of the 208 Plan. Costs are expected to be minimal and shall be financed by the implementing jurisdictions.

Action 45: Each jurisdiction shall improve its streets within the NIWA area with curb and gutter, where needed, to facilitate removal of significant street pollutants. Costs will vary by jurisdiction. Financing of these costs shall be provided through local funding sources or as a condition of development.

Action 46: Each jurisdiction shall identify areas within the watershed which are recurringly used as illegal dump sites and increase enforcement of applicable regulations. Costs for this activity will vary by jurisdiction and will be provided through local funding sources.

VESSEL WASTE MANAGEMENT

Policy: Appropriate agencies shall enforce existing laws to control vessel-related pollution, and the voluntary modification of behavior of the public whose actions directly affect Newport Bay water quality shall be gained through the use of educational programs.

Action 47: The Orange County Sheriff shall enforce existing laws requiring marinas to have accessible sewage pumpout capability. This activitiy shall commence immediately upon adoption of the 208 Plan. Costs of implementation are anticipated to be minimal and shall be financed by the County of Orange or its contractors.

Action 48: The United States Environmental Protection Agency shall support development of a device for in-the-water hull cleaning of pleasure craft which incorporates a retaining bag to collect the material removed. When these devices are made available and proven effective and economical, the Regional Water Quality Control Board shall require their use for in-the-water hull cleaning. It is estimated that strict enforcement of these regulations will cost $15,000 (1978) per year, to be borne by the State of California.

Action 49: The City of Newport Beach and the County of Orange shall amend the existing maintenance agreement and increase its funding to provide for emergency cleanup of Lower Newport Bay.

Action 50: The Southern California Association of Governments shall develop and implement public education programs designed to reduce vessel-related pollution.

Action 51: Working with the EPA, U.S. Coast Guard, State Water Resources Control Board, Orange County Sheriff and any other appropriate governments, NIWA shall define the duties and authorities of such entities, to enforce existing state and local regulations in Newport Bay, and to cooperatively develop an enforcement program. Such programs shall thereafter be available for use by the implementing and enforcing entities as well as for use in developing the public educational programs.

INTEGRATED WATER QUALITY EVALUATION PROGRAM

Policy: A comprehensive monitoring and modeling program shall be developed for Newport Bay and its watershed integrating continuing monitoring programs conducted by existing agencies.

Action 52: Determine the source(s) of bacterial contamination to Upper Newport Bay and develop appropriate mitigation measures.

Action 53: Determine the source(s) and impacts of the high nutrient levels entering Upper Newport Bay via San Diego Creek and, where needed, develop appropriate mitigation measures.

Action 54: Assess the impacts of pollutants entering Upper Newport Bay via storm drains and the Santa Ana-Delhi Channel and, where needed, develop appropriate mitigation measures.

Action 55: Task 2-3: Ongoing UCI continuing action study.

A. Water quality monitoring in the major channels shall be performed to determine the pollutant inputs to Upper Newport Bay.

B. An intensive water quality survey shall be performed to determine detailed information regarding runoff quality and quantity from major land use types.

C. A special sediment transport analysis shall be performed to determine the amount of sediment which is carried from the watershed into Upper Newport Bay.

IMPLEMENTATION PLAN

Policy: Implementation of the 208 Plan shall rely primarily on local governments and special districts designated as management agencies. Coordination and consolidation of management agency functions shall be encouraged to avoid fragmentation or duplication of services. Coordination of 208 Plan implementation and the continuing planning process shall be shared by the regional water quality control boards and the designated areawide planning agency (working with participating local agencies) consistent with state guidelines.

Policy: Point source and nonpoint source control planning shall be coordinated through the 208 planning process, with the recognition that control needs may differ within different watersheds, and would rely on local agencies for data, analysis, and implementation to the maximum extent possible.

Policy: Water quality control measures recommended in 208 planning shall use the most cost-effective approach to protect, and where possible enhance, water quality; prevent water quality problems from occurring; provide for compliance with state and federal law; and take into consideration related social, economic, and environmental factors.

Policy: Local implementation of nonpoint source controls shall rely primarily on local regulation, consistent with 208 planning and with state and federal regulations.

Policy: Strict enforcement of discharge requirements shall be supported. If research shows that detrimental impacts are not present, then change of discharge requirements shall be encouraged.

Policy: Coordination of water quality research, monitoring, and planning activities shall be encouraged.

Policy: Nonpoint source control programs shall be financed through federal, state, or local funding sources, depending upon the availability of funds from each source. State and federal funds for nonpoint source control programs shall be sought to the maximum extent. Local funding alternatives shall be included for all nonpoint source controls in the 208 Plan as a contingency.

Policy: The 'user pays' principle shall be encouraged for financing municipal wastewater management systems, consistent with state and federal requirements. Flexibility of wastewater management agencies to choose among various local financing mechanisms shall be encouraged.

Policy: State and federal methods for allocating funds, consistent with 208 and AQMP Plans, shall be supported so that grants for municipal wastewater treatment are allocated to the region based on identified needs.

SECTION II

Environmental Setting

Environmental Setting

The environmental characteristics of the South Coast Planning Area are discussed in Terms of 18 separate factors:

1. Geology and soils
2. Ground water
3. Surface water
4. Marine water
5. Marine biology
6. Air quality
7. Terrestrial biology
8. Archaeological and historical sites
9. Land use
10. Population
11. Housing
12. Transportation systems
13. Water supply systems
14. Wastewater facilities
15. Waste disposal systems
16. Major energy systems
17. Public services
18. Economy and employment.

This setting information, however, is not included in this document. The setting is currently being utilized as the basis for impact assessments of two other SCAG areawide plans: SCAG-78 Growth Forecast Policy and Air Quality Management Plan. Consequently, it has been bound under a separate cover entitled *Environmental Setting SCAG Region: South Coast Planning Area, Ventura County, and Desert Areas.* Information contained in the setting document that is pertinent to the South Coast Planning Area is therefore incorporated into the draft 208 Plan DEIR by reference.

SECTION III

Evaluation of Draft 208 Plan Policies

Evaluation of Draft 208 Plan Policies

This section describes the role of areawide policies in 208 planning and the process used to develop draft 208 Plan policies and presents a comprehensive listing of policies that guide actions proposed in the Plan. A description of the process used to evaluate the policies prior to their selection by the SCAG Environmental Quality and Resource Conservation Committee for inclusion in the draft 208 Plan is also included.

Twenty-nine areawide policy statements are recommended in the draft 208 Plan (see Table III-I) at the end of this section. These policies form the framework for the more specific action recommendations that are analyzed for environmental effects in Section IV of this EIR. For the purposes of this report and for 208 planning, policy is defined as a guide for decisionmaking. Policies imply commitment to goals and define courses of action directed toward fulfilling these goals.

ROLE OF AREAWIDE POLICIES IN 208 PLANNING

The role of areawide policies in the 208 program is to establish a context and a set of guiding principles for the development and implementation of the 208 Plan. Following are the major categories requiring policy direction for decisionmaking:

1. Water Quality Management Framework
2. Nonpoint Source Control Needs
3. Municipal and Industrial Waste Treatment System Needs
4. Residual Waste and Stormwater Needs
5. Conservation and Reclamation
6. Management Agencies and Regulatory Programs.

The areawide policies establish a context for the detailed policy-action planning described and evaluated in Section IV of the EIR. Detailed studies were undertaken as part of the "Priority Action Program," "Comprehensive Policy Program," and "Continuing Planning and Action Program," by participating agencies and SCAG. The following documents are incorporated herein by reference as evaluations of policy alternatives:

- "Draft Areawide Policy Alternatives for Water Quality Management: Issue Paper 1 – Alternatives, Issue Paper 2 – Evaluation," May 1, 1978, SCAG 208-23

- "Public Record for Draft 208 Areawide Policy Alternatives for Water Quality Management and Development Guide for Alternative Population, Housing, Employment and Land Use Forecasts," July 1978, SCAG; Addenda, August, 1978.

- "Hearing Board Report on Draft 208 Areawide Policy Alternatives for Water Quality Management and Draft Development Guide Alternative Population, Housing, Employment, and Land Use (PHEL) Forecasts," July 1978, SCAG

- "Milestone Report – A Regional Profile," (Revised June, 1978), SCAG

- "Milestone Report – A Regional Profile," January 20, 1978, SCAG

- "Public Record for the 208 Early Action Program Design and Milestone Report," April, 1978, SCAG 208-24

- "Report and Recommendations of the Public Hearing Board on the 208 Milestone Report and Early Action Program Design," May, 1978, SCAG 208-25.

The process used in the development and evaluation of the areawide policies as reflected in the documents referenced above is described below.

PROCESS FOR AREAWIDE POLICY DEVELOPMENT AND EVALUATION

A 208 Program report entitled "The Milestone Report – A Regional Profile" identified 25 major water quality issues for policy development. The issues were refined and placed into the six previously listed categories for inclusion into the draft 208 Plan. Then in the 208 Program report entitled "Draft Areawide Policy Alternatives for Water Quality Management" discussion of each issue was presented to describe the background of the issue, followed by a range of policy alternatives for addressing the issue. The range of policy alternatives was evaluated in two ways: by participating agencies and by SCAG staff, assisted by the 208 Program Consultant, Daniel, Mann, Johnson, & Mendenhall. Participating agencies included the City of Los Angeles, the Counties of Los Angeles, Orange, Riverside, and San Bernardino, the Newport-Irvine Waste Management Planning Agency, the Santa Ana Watershed Project Authority, and the Ventural Regional County Sanitation District.

The issue statements initiated the process of areawide policy development; as the 208 Program progressed, alternative policies were developed to address each issue, and policies were then selected for inclusion in the 208 Plan. These policies establish a context and a set of guiding principles for the development and implementation of the 208 Plan.

The policy alternatives in this report were presented and reviewed at public workshops and hearings in the spring and early summer of 1978. The results of the evaluation of the policy alternatives, together with public input, were then brought forward to the SCAG committee structure for selection of policies to be included in the draft 208 Plan.

The comments (written and oral) received at the public hearings and workshops and the recommendations of the Hearing Board were reviewed by three Committees, and refinements to the policies were debated and made. The three Committees involved in the selection process for the areawide policies were the 208 Citizens Advisory Committee, the 208 Program Committee, and the SCAG Environmental Quality and Resource Conservation Committee (EQRCC). Refinements made

by each committee were referred to the next higher committee until they reached the EQRCC, the 208 Policy Advisory Committee, where three sets of recommendations (Hearing Board, 208 Citizens, and 208 Program Committees) for each policy alternative were considered. The policies selected by the EQRCC in late July 1978 are those that appear in the policy actions (see Figure 5) recommended in Section IV of this EIR.

The review, evaluation, and public comment process leading to the selection of the policies contained in the draft 208 Plan has spanned seven months of concentrated review and resulted in over 2,000 pages of documentation. Evaluations of the environmental effects of actions proposed in the draft 208 Plan consistent with the areawide policies are discussed in Section IV of this EIR.

It should be noted that the selected policies have been grouped into categories for preparation of the draft 208 Plan. These categories, which correspond to chapters in Section IV of this EIR, are as follows:

- Nonpoint Source Waste Management (Chapter 1)
- Municipal and Industrial Waste Management (Chapter 2)
- Water Conservation and Reuse (Chapter 3)
- Residual Waste Management (Chapter 4).

In addition, policies for the fifth element of the draft 208 Plan—Integrated Control Plans, Priority Program for Newport Bay—have been developed by the Newport-Irvine Waste Management Planning Agency to guide the implementation of actions proposed for protecting Newport Bay. These policies are specific to the Newport Bay watershed and are consistent with the areawide policies selected by the EQRCC.

TABLE III-1

AREAWIDE POLICY ALTERNATIVES FOR WATER QUALITY MANAGEMENT AS SELECTED BY THE SCAG ENVIRONMENTAL QUALITY AND RESOURCE CONSERVATION COMMITTEE JULY 1978

NONPOINT SOURCE WASTE MANAGEMENT PLAN

General Policy: Local governments shall be encouraged, in accordance with areawide guidelines, to minimize nonpoint source pollution resulting from land management practices, recognizing that environmentally sensitive areas need protection to prevent water quality problems and protect beneficial uses, including natural ecosystems.

SPILLS OF HAZARDOUS SUBSTANCES

Policy: See general policy.

URBAN NONPOINT SOURCE WASTES

Policy: See general policy.

URBAN AND INDUSTRIAL STORMWATER NEEDS

Policy: Measures to reduce runoff volume and peak flows in new developments shall be supported where practicable to maintain a more native riparian habitat and to minimize the need for stream channelization.

Policy: Operational procedures in stormwater systems management shall be supported which protect water quality and encourage maximum beneficial use of stormwater to the extent economically feasible.

CONSTRUCTION ACTIVITIES

Policy: In locations where current management practices are inadequate for erosion control, more effective control programs to minimize storm-related impacts on receiving waters, which impacts result from transport of sediment from construction sites, shall be implemented and stricter enforcement of grading ordinances shall be encouraged. Reduction of grading shall be encouraged where consistent with public safety.

AGRICULTURAL PRACTICES

Policy: Best Management Practices[1] for control of water quality of agricultural return flows, based on economic and environmental considerations, shall be implemented where analysis shows that water quality and beneficial uses would be protected.

SALINE WATER INTRUSION

Policy: Current ground water basin management practices that are controlling saltwater intrusion in coastal areas shall be maintained, and additional practices, where necessary, shall be encouraged.

---

[1] Best Management Practices, as defined by federal regulations (40 CFR 130.2) are "a practice, or combination of practices, that is determined by a state (on designated areawide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.

TABLE III-1 (Continued)

OTHER MISCELLANEOUS SOURCES

Policy: Additional research on aerial fallout impacts on water quality shall be supported.

Policy: Management of nonpoint source pollution from vegetative management shall be supported where known water quality problems have occurred.

Policy: Preventive management strategies for mining-related nonpoint sources of pollution to protect water quality shall be supported.

MUNICIPAL AND INDUSTRIAL WASTE MANAGEMENT PLAN

CONSISTENCY OF MUNICIPAL WASTEWATER FACILITIES WITH AREAWIDE GROWTH PROTECTION

Policy: Municipal[1] wastewater collection and treatment facilities shall be planned, designed and constructed based on SCAG's adopted growth forecast and water conservation policies. Consistency of wastewater facilities with SCAG's growth forecast shall be ensured through the location and size of the facilities and through the timing of their use. Phased and modular construction of treatment plants shall be encouraged.

Policy: In locations where municipal wastewater facilities are approaching capacity, local governments shall, consistent with local and regional growth policies and water quality protection, be encouraged to actively seek funds for capacity increases, to develop contingency plans for wastewater management, and to restrict future development until sufficient capacity, or approved alternative waste treatment systems, are provided.

WASTEWATER FACILITIES PLANNING AND AIR QUALITY MANAGEMENT COORDINATION

Policy: Municipal wastewater facilities planning shall be consistent with the adopted Air Quality Management Plan, based on the adopted growth forecast policy and measures for attaining and maintaining ambient air quality standards.

INDUSTRIAL PRETREATMENT AND OCEAN DISCHARGE

Policy: The flexibility of management agencies to choose among various pretreatment programs, which result in compliance with discharge requirements, shall be encouraged.

Policy: Treatment levels for deep ocean discharges shall be supported which protect, enhance, and restore marine water quality and which assure balanced, indigenous, populations of marine life. Wastewater reclamation and reuse shall be encouraged as an alternative to wastewater discharge to the marine environment.

---

[1]Municipal facilities are identical to publicly-owned treatment works as defined by federal regulations, and do not include discrete industrial dischargers.

TABLE III-1 (Continued)

UNSEWERED AREAS

Policy: In rural areas, alternatives to centralized wastewater treatment systems shall be encouraged, consistent with protection of groundwater quality and public health.

WATER CONSERVATION AND REUSE

General Policy: Appropriate changes in institutional, legal, and financial arrangements shall be encouraged to increase the potential for wastewater reuse, taking into account public health, environmental, and socioeconomic constraints, and the cost of imported waters.

General Policy: Appropriate existing or revised monitoring and regulatory requirements, shall be supported to increase the potential for wastewater reuse when consistent with public health, social, economic, and environmental constraints. Increased research on environmental and health constraints shall be encouraged.

General Policy: Wastewater and water supply systems development shall encourage water conservation and reuse as a method for augmenting the limited freshwater supply, taking into account public health, environmental, socioeconomic, and water rights constraints.

STORM WATER CONSERVATION

Policy: See general policies.

WATER USE CONSERVATION

Policy: See general policies.

WASTEWATER RECLAMATION AND REUSE

Policy: See general policies.

RESIDUAL WASTE MANAGEMENT PLAN

WASTEWATER SLUDGE MANAGEMENT

Policy: The regional sludge management strategy that shall be supported is that which has the least environmental, social, economic, and resource costs, considered jointly; measures to increase energy recovery or other beneficial uses of sludge shall be encouraged.

OTHER SOLID AND NONSEWERABLE LIQUID WASTES

Policy: Residual waste management programs—including disposal, resource/energy recovery, waste-reduction, and recycling—shall be consistent with water quality goals.

TABLE III-1 (Continued)

IMPLEMENTATION PLAN

Policy: Implementation of the 208 Plan shall rely primarily on local governments and special districts designated as management agencies. Coordination and consolidation of management agency functions shall be encouraged to avoid fragmentation or duplication of services. Coordination of 208 Plan implementation and the continuing planning process shall be shared by the California Regional Water Quality Control Boards and the designated areawide planning agency (working with participating local agencies) consistent with state guidelines.

Policy: Point source and nonpoint source control planning shall be coordinated through the 208 planning process, with the recognition that control needs may differ within different watersheds, and would rely on local agencies for data, analysis, and implementation to the maximum extent possible.

Policy: Water quality control measures recommended in 208 planning shall use the most cost-effective approach to protect, and where possible enhance, water quality; prevent water quality problems from occurring; provide for compliance with state and federal law; and take into consideration related social, economic, and environmental factors.

Policy: Local implementation of nonpoint source controls shall rely primarily on local regulation, consistent with 208 planning and with state and federal regulations.

Policy: Strict enforcement of discharge requirements shall be supported. If research shows that detrimental impacts are not present, then change of discharge requirements shall be encouraged.

Policy: Coordination of water quality research, monitoring, and planning activities shall be encouraged.

Policy: Nonpoint source control programs shall be financed through federal, state, or local funding sources, depending upon the availability of funds from each source. State and federal funds for nonpoint source control programs shall be sought to the maximum extent. Local funding alternatives shall be included for all nonpoint source controls in the 208 Plan as a contingency.

Policy: The "User Pays" principle shall be encouraged for financing municipal wastewater management systems, consistent with state and federal requirements. Flexibility of wastewater management agencies to choose among various local financing mechanisms shall be encouraged.

Policy: State and federal methods for allocating funds, consistent with 208 and AQMP Plans, shall be supported so that grants for municipal wastewater treatment are allocated to the region based on identified needs.

SECTION IV

Environmental Evaluation of Draft 208 Plan Actions

Environmental Evaluation of Draft 208 Plan Actions

In the following section the fifty-five actions recommended in the draft 208 Plan are evaluated for potential environmental impacts. The actions are grouped under five separate chapters, one for each of the draft 208 Plan elements. These chapters are as follows:

1. Nonpoint Source Waste Management Plan (14 actions)
2. Municipal and Industrial Waste Management Plan (10 actions)
3. Water Reuse and Conservation (3 actions)
4. Residual Waste Management Plan (4 actions)
5. Integrated Control Plans — Priority Program for Newport Bay (24 actions).

Within each chapter the specific actions recommended for implementation are identified and followed by a brief introduction to the problem the action addresses. This information supplements that of the Project Description. Following the introduction, all potential impacts of the recommended actions are separately discussed, with each impact being listed with a bullet (■). Potential impacts are categorized into two groups: (1) Beneficial Impacts, and (2) Adverse Impacts and Mitigation Measures. Impacts within these two categories are ordered from biophysical to socioeconomic. Mitigation measures for adverse impacts are identified where appropriate and are typed in italics directly following the impact being mitigated.

It should be noted that other SCAG programs involve simultaneous preparation of areawide plans and DEIRs. These documents occasionally address impacts and mitigation measures that are also identified in the draft 208 Plan DEIR. Frequently, these discussions are more detailed than that found in the draft 208 Plan DEIR due to the assessment's focus, e.g., growth and air quality. These documents have, therefore, been incorporated by reference, where appropriate, into the draft 208 Plan DEIR.

At the end of each chapter the significant adverse environmental impacts of all actions in a plan element are discussed in terms of unavoidable adverse impacts. These include those that are not considered sufficiently mitigated and those that cannot be mitigated. The significance of these unavoidable adverse impacts is further assessed in terms of short-term use versus long-term productivity or the preclusions of some long-range beneficial use of the environment, and irreversible commitment of resources or irreversible environmental changes, including biophysical and socioeconomic resources. Also discussed separately at the end of each chapter are the growth-inducing impacts of each plan element.

CHAPTER 1 – NONPOINT SOURCE WASTE MANAGEMENT PLAN

CHAPTER 1
Nonpoint Source Waste Management Plan

Nonpoint source wastes are those that migrate to receiving waters from a variety of dispersed locations. Sources of this type are most prevalent during rainstorm periods when pollutants deposited on the surface in both urban and rural areas are transported by stormwater runoff to receiving waters.

When compared with point sources, which are defined as a "discernible, confined, or discrete conveyance of a pollutant" (Ref. 1), nonpoint sources have received relatively little attention as threats to water quality. However, as municipal and industrial point sources have come under greater control, more attention has been directed toward management of the more difficult to contain nonpoint sources of pollution.

The seven potential areas of nonpoint source pollution that are addressed in the draft 208 Plan are as follows:

1. Spills of hazardous substances
2. Urban nonpoint source wastes
3. Urban and industrial stormwater system management
4. Construction activities
5. Agricultural practices
6. Saline water intrusion
7. Other miscellaneous sources.

The draft 208 Plan recommends management actions for all of the above sources, except miscellaneous sources (an additional study of miscellaneous sources is required before actions can be formulated). A discussion of the potential environmental impacts associated with implementation of the draft 208 Plan actions follows:

SPILLS OF HAZARDOUS SUBSTANCES

Two actions are being recommended in the draft 208 Plan for managing spills of hazardous substances. First, it is recommended that a comprehensive areawide-local contingency plan for containment and cleanup of spills of hazardous substances be developed and implemented. Second, the plan recommends implementation on a subregional level of specific actions. These two actions are assessed simultaneously below.

Action 1: Develop and implement a comprehensive areawide-local contingency plan.

Action 2: Implement specific subregional actions to improve containment and cleanup procedures for hazardous substance spills as described in Table IV-1 and as recommended by participating agencies.

Currently, a host of federal, state, and local regulations exist dealing with spill prevention and cleanup. Similarly, there are a large number of agencies involved in these activities. This approach to the problem of hazardous substance spills, which involves a large number of participants, relies heavily on interagency coordination and cooperation. However, coordination problems do occur because each agency tends to concentrate on the circumscribed areas of its own concern. Local agencies, such as police and fire departments, have no central source to guide their prevention and cleanup efforts (Ref. 2). To mitigate these coordination problems, it is recommended in the 208 Plan that a comprehensive contingency plan be developed and implemented in which a single lead agency is designated, and authority and responsibility are delegated among involved agencies.

For purposes of analysis, it is assumed that standardization and coordination of participating agencies would improve the effectiveness of the six operational spill response phases (Ref. 3):

1. Discovery and notification
2. Evaluation and initiation of action
3. Containment of spill and countermeasures to minimize public danger
4. Cleanup and disposal
5. Documentation and cost recovery
6. Review documentation to determine future corrective actions that should be taken to prevent future spills.

In the event these proposed plans are neither developed nor implemented, it is assumed that some level of less efficient cleanup activities will occur similar to that currently being achieved.

To determine the degree to which implementation of subregional contingency plans would result in improved existing spill response activities is neither practicable nor achievable given the level of existing data, difficulty in measuring performance, or the complexity of such an analysis. Therefore, only qualitative impacts that could result from increases in the effectiveness of one or more of the operation spill response phases are identified. The subregional actions shown in Table IV-1 would similarly increase the effectiveness of spill response operations. Therefore, these specifications are assessed simultaneously with the action to develop spill contingency plans. The specific actions are assessed jointly, since implementation of one separate particular action would generally not result in significant progress toward obtaining their common goal of increased spill response effectiveness.

BENEFICIAL IMPACTS

- Increased spill response effectiveness, which limits the entry and spread of hazardous substances in the environment, would decrease the potential for migration of hazardous substances to receiving waters. The possibility for adverse impacts on the beneficial uses of surface waters would, therefore, be reduced.

- The potential for degradation of groundwaters overlying spill areas could be potentially reduced by more effective prevention and more efficient cleanup of spills.

TABLE IV-1

CONTINGENCY PLANS FOR SPILLS OF HAZARDOUS SUBSTANCES
SUMMARY OF PARTICIPATING/LEAD MANAGEMENT AGENCY RECOMMENDED INITIAL ACTIONS

Actions	County of San Bernardino	County of Riverside	County of Orange	County of Los Angeles	City of Los Angeles
1a.* Requirement for one agency within each County and the City of Los Angeles, to maintain an information storage system containing records of spills; including data, location, cause of spill; materials spilled; estimated quantity; containment clean-up procedures utilized; agencies responsible; damages, costs incurred, and reimbursements; and recommendations to prevent future occurrence. See spill response and incident record forms. All spills reports are to be provided to the Areawide Planning Agency for their annual report.	Cost: $3,000 (1a) Schedule**: 1-1-80			Cost: $3 million for (1a, 1b, 1c) Schedule**: 7-1-83	Cost: 1a, b, c, included in Los Angeles County (1a, 1b, 1c)
1b. Inventory the location by industry and by type of material, quantities manufactured, utilized, stored, and transported within each County and the City of Los Angeles.					
1c. Develop computerized inventory of all connections to the storm drains with information on the land use, point source discharges, and all processes, materials stored, used or manufactured in the area tributary to the connection.					
1d. Adopt legislation for large legible universal labelling as on adjunct to placarding.					Cost: No additional (user pays) Schedule :12 1-79
1e. Standardize spill response and incident record forms.		Cost: No additional Schedule**: 9-1-79	Cost: $500 Schedule : 9-1-79	Cost: No additional Schedule**: 9-1-79	
1f.* Amend and adopt local ordinances to provide needed enforcement powers with appropriate fees or penalties for violations so as to expedite control of potential or actual spill episodes.	Cost: $2,000-$3,000 Schedule**: 4-1-80		Cost: Not available Schedule**: 4-1-80		
1g.* Develop, coordinate and/or expand special training for spill control teams; better define and improve spill control and containment techniques.	Cost: $5,000-$10,000 Schedule**: 6-1-80	Cost: No additional Schedule**: 6-1-80	Cost: $8,900 for workshops Schedule**: 6-1-80		Cost: $875,600/team $21,000 for seminar and video film Schedule**: 6-1-80
1h.* Improve and coordinate emergency communications systems for use during spill incidents.	Cost: No additional Schedule**: 11-1-79		Cost: $1,200/year Schedule**: 11-1-79	Cost: Not available Schedule**: 11-1-79	Cost: No additional Schedule***: 11-1-79
1i.* Provide emergency contingency fund for clean-up of spills and a reimbursement system.			Cost: $20,000 Schedule**: 9-1-79	Cost: $40,000/year Schedule**: 9-1-79	
1j.* Develop and implement public information programs for industry and the general public on the need for adequate handling, storage, and transport of hazardous substances.	Cost: $4,000-$5,000 Schedule**: 10-1-79		Cost: $6,000 (SCAG estimate) Schedule**: 10-1-79	Cost: $6,000 (SCAG estimate) Schedule**: 10-1-79	

SOURCE: Southern California Association of Governments Draft 208 Plan, October 1978.

* Recommended for consideration and implementation by each Participating Agency.
**Date indicates proposed schedule by which implementation is to be effected.

- As a result of the continuity between surface waters and marine water, there is a potential for reduced impacts on marine water quality. Similarly, the potential for adverse marine water quality impacts would be reduced if ocean spills were handled more effectively.

- More efficient cleanup operations would reduce the potential for hazardous substance spills to adversely impact aquatic biological communities, terrestrial biological communities, and water-related recreational activities.

- Assuming that spills of volatile substances would be dealt with more effectively, there would be a potential for reduced air pollution.

- Indirect visual amenity benefits could result as a product of improved containment and disposal activities.

- More effective spill response operations would reduce the duration of potential exposure to hazardous substances, thereby reducing public health and safety risks.

- Etching that occurs to sidewalks, gutters, and storm drains as a result of acid waste spills would potentially be reduced.

- Hazardous substance spill incidences could potentially be reduced as a result of improved information review and documentation activities, which are designed to identify future corrective actions.

- A long-term benefit from a well-developed program may involve lower levels of risk from spills, which might lessen possibilities of future litigation and result in lower liability insurance costs.

- Increased spill response effectiveness and fewer spill incidences would reduce the economic externalities currently associated with a hazardous substance spill.

- Public and private sector job opportunities may result from improved enforcement of new regulations.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Material recovered from a hazardous substance spill will require disposal in a Class I landfill where the wastes would be contained in an environmentally safe manner. Such disposal activities would exert a slight increase in the demand for Class I landfill capacity; however, it is expected that such an impact would probably be negligible given the quantities of wastes to be disposed. *Although slight, this impact could be mitigated by a reduction in the number of spill incidences, which may result from development and implementation of comprehensive spill contingency plans.*

- New requirements and enforcement of spill prevention programs could require private capital investment. *However, these costs may be offset by accrued savings resulting from a decrease in accident rates.*

- Development and implementation of contingency plans are estimated to cost approximately $250,000. Implementation and operational costs could accrue to fire departments, police departments, health services agencies, U.S. Coast Guard, water quality control boards, etc. Similar costs will result from training sessions for key personnel from each agency. Additional costs may result if these key personnel have to retrain additional personnel skilled in handling alternative contingency

plans. Such sessions may require annual or biannual repetition for the purposes of ensuring proper transmission of new technological information and procedures continually being developed. Costs may also result from developing, printing, and distributing manuals, guides, and other literature that deal with the newly-developed contingency plans. *The costs of training personnel could be reduced if there were a centralized pooling of trained personnel and equipment. Realization of these economies of scale would make spill response activities relatively more cost effective than current spill response activities that are fragmented. In addition, costs incurred by the public could be reimbursed through the adoption of more stringent spill fines. Those costs not recovered by fines could potentially be federally financed, thereby distributing the public costs over a much larger population.*

- The costs of implementing the specific subregional actions are shown on Table IV-1.

URBAN NONPOINT SOURCE WASTES

Two actions under this topic are recommended by the draft 208 Plan. These include maintaining existing street sweeping programs with consideration given to increasing the programs' effectiveness, and maintaining current litter control programs.

Action 3: **Existing street sweeping programs (prior to passage of Proposition 13) should be continued with consideration given to increasing their effectiveness in reducing wasteloads to receiving waters.**

No impacts would result from this action since no changes from existing practices are involved at this time. Giving consideration to increasing street cleaning program effectiveness would have no direct environmental impacts until such time that these considerations are fully developed and implemented by the city sanitation departments or another appropriate department.

Action 4: **Maintain current litter control programs.**

No impacts would result from this action since no changes from existing practices are involved.

URBAN AND INDUSTRIAL STORMWATER SYSTEM NEEDS

Two actions are recommended in the draft 208 Plan for stormwater systems and maintenance operations: maintaining current catch basin and storm drain cleaning programs, with consideration given to increasing their effectiveness, and emphasizing reduction of runoff volume and peak flow rates as mitigation measures in environmental impact reports.

Action 5: **Maintain current catch basin, inlet basin and storm drain cleaning programs with consideration given to increasing the effectiveness of these programs.**

No impacts would result from this action since no changes from existing practices are involved at this time. Giving consideration to increasing program effectiveness would have no direct environmental impacts until such time when the methods of increasing program effectiveness are fully developed and implemented by the city sanitation departments and the county flood control districts.

Action 6: **Emphasize reduction of runoff volume and peak flow rates as mitigation measures in environmental impact reports (EIRs) for new developments.**

Direct runoff from a site is usually increased by development, since the construction of impervious surfaces, e.g., buildings and paving, decreases percolation into the ground. This results in decreased

ground water recharge, less available ground water for vegetation, and increased demands on storm drainage systems. Peak flows also increase since water flows off the site and collects in storm drains more quickly. Techniques for reducing runoff volumes and peak flows include the use of porous pavements, ground covers, on-site storage, berms, terracing, and careful overall planning of site drainage.

The nature of the impacts to be expected from this action are described below. The degree to which each impact would occur depends upon the extent to which the recommended emphasis results in the implementation of the suggested mitigation measures by developers. Since compliance would not be compulsory, the degree to which developers would voluntarily assume increased costs is conjectural.

These impacts deal only with post-construction effects. Increased erosion and runoff from construction activity are dealt with in the next section (Construction).

BENEFICIAL IMPACTS

- Reduced runoff volumes and peak flow rates would increase the potential for ground water recharge.

- Increased potential for ground water recharge could prevent some decreases in native vegetation, particularly in riparian areas, or could possibly result in lower irrigation requirements for introduced vegetation.

- A reduced potential for destruction of vegetative habitats (see previous impact) could cause more wildlife to remain in an area after development operations had ceased.

- Alteration to the land's visual character, which could result from decreases in vegetative cover, possible changes in the types of vegetative cover, increased area of bare soil, and the formation of erosion channels would potentially be reduced if this action were implemented.

- Reduced runoff volumes and peak flow rates could potentially result in reduced public safety hazards that result from flooding. This impact, however, would be minor, since the amount of water involved would be small compared to major flood sources.

- Cost of flood control facilities might be less since implementation of this action could potentially result in an overall reduction in the size of storm drainage facilities.

- In a properly planned development little soil erosion occurs after the completion of construction since the soil is stabilized by structures, paving, and vegetative cover. The above action, however, would reduce the small amount that would take place. To the same minor extent, the following related impacts would also occur:

  1. Degradation of surface water quality by sediments and pollutants that are carried by runoff waters could potentially be reduced.

  2. There could be a reduced potential for effects on aquatic and marine biota and possibly terrestrial biota resulting from the introduction of sediments and pollutants, and from changes in water temperature caused by surface runoff. Adverse effects to some biotic organisms could also occur, however (see Adverse Impacts).

  3. Reduced levels of erosion could over a period of time result in fewer landslide or slippage problems, thereby limiting damage and public safety risks.

4. Increases in downstream siltation could be less, resulting in lower costs for dredging of channels, reservoirs, and harbors.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Increased ground water recharge resulting from runoff control could increase the possibility for localized ground water degradation. *Before runoff control devices are employed, site-specific analysis should be done to ensure that there is a sufficient depth of soil above ground water to filter runoff leachate.*

- Retention of stormwater in landslide areas could cause increased risk of further slope failures. *Site-specific studies should be done to evaluate the type of runoff management appropriate to a given area.*

- Improperly applied or managed runoff control systems could result in waterlogging and ponding, seepage problems, or increased salt loads in water that reaches ground water systems. *These problems could be mitigated by site-specific studies to evaluate the type of runoff management that is appropriate to a given site.*

- Some of the techniques used to decrease runoff and peak flows would slightly increase consumption of resources such as construction materials and energy. *Conservation of resources should be considered during design and construction.*

- A decrease in sediment deposits could have a detrimental effect on some kinds of aquatic and marine life by decreasing the flow of nutrients sustaining them. This would be a relatively insignificant impact, since little soil erosion occurs after the completion of construction in a properly planned development.

- The financial burden for drainage and flood control would become more the responsibility of the developer rather than the public at large, which would result in increased costs to the developer. It is reasonable to assume that a percentage of the cost, if not all of the cost, would be passed on to the buyer or tenant. *Measures to mitigate these increased costs would include in-depth studies directed toward determining the cost-benefit effectiveness of the various methods being considered to control runoff. Recommended methods should achieve the maximum benefits with the minimum level of financial impact.*

- Increased levels of governmental activity could result in increased resentment of the government and less cooperation from businesses and the public. *Local governments should carefully evaluate the benefits that can be achieved with each contemplated increase in governmental activity. Informational materials should be prepared for distribution to developers, explaining the need for each action and its specific intent, providing cost-benefit information, and soliciting cooperation and suggestions.*

- Techniques for reducing runoff could impair visual quality during and after construction. *These effects could be mitigated if literature prepared by landscape architects were distributed to developers showing how the visual amenities might be most enhanced and least degraded by the use of the recommended materials and techniques.*

- Increased mitigation of runoff could result in construction delays. *To avoid such delays the permitting process should be streamlined as much as possible by simplifying procedures and encouraging coordination among permitting agencies.*

CONSTRUCTION ACTIVITIES

Actions being recommended by the draft 208 Plan for hillside areas are the strengthening of existing erosion and grading control ordinances so they are at least as stringent as the Model Grading Ordinance included in the 208 Plan, stringent enforcement of erosion and grading control ordinances, and distribution of information to homeowners concerning erosion and landslide hazards.

Action 7: **Strengthen existing erosion and grading control ordinance by (1) adopting specific ordinances for areas requiring water quality control, which are to be at least as effective as the Model Erosion and Sedimentation Control Measures for Grading Ordinances guidelines in Appendix B of the draft 208 Plan or (2) adopting the Model Erosion Control Ordinance contained in Appendix C of the draft 208 Plan.**

Action 8: **Stringently enforce erosion and grading control ordinances in areas identified in Table IV-3.**

A major nonpoint source of water pollution is sediment that erodes from soils disturbed by construction activities, particularly grading. The loss of soil during construction activities considerably exceeds the site's natural soil losses. A variety of control techniques can be applied to construction activities to reduce this loss. These include diversion of runoff from graded areas, terracing, immediate revegetation, limitations on exposure time, and use of slope stabilizers, berms, and sediment basins (see Table IV-2, prepared by J. B. Gilbert and Associates, for a more complete list).

Local grading ordinances in the South Coast Planning Area are all based on Chapter 70 of the Uniform Building Code, with various degrees of modification (Ref. 4). The effectiveness of these ordinances appears to vary considerably, depending upon how strictly regulations are enforced, the degree of cooperation from construction firms, proper design and maintenance of required control devices, and other factors. The above actions would strengthen existing ordinances to make them more effective in preventing erosion from construction sites.

The nature of the impacts to be expected from these actions are described below. The degree to which each impact could occur in a given area would be dependent upon the effectiveness of existing ordinances in that area. Table IV-3 indicates those areas which are now or are potentially impacted by accelerated erosion and sediment from construction activities.

BENEFICIAL IMPACTS

- Erosion during periods of construction could be reduced.
- Degradation of surface water quality by sediments and other pollutants carried by runoff water would potentially be reduced.
- Effects on aquatic and marine biota and possibly terrestrial biota that result from the introduction of sediments and other pollutants to surface water and from changes in water temperature could be potentially reduced.
- Reduced levels of future erosion could, over a period of time, result in fewer landslide or slippage problems, thereby limiting damage costs and public safety risks.
- Soil productivity losses that result after excessive erosion would be reduced.
- Reducing the potential for loss of soil productivity could result in the growth of greater amounts of natural vegetation after construction or in lower requirements for fertilizers and soil amendments for introduced vegetation.

TABLE IV-2
CONSTRUCTION ACTIVITY CONTROL MEASURES

:ON ACTIVITY CONTROL MEASURES

Control Measure	Description	Applicability	Approximate Effectiveness	Implementation Requirements	Potential Impacts[a]	Additional Costs to Developer
C-1. Limit slope	Limit degree of slope, e.g., to angle of repose of the soil type, or a maximum of 2 horizontal to 1 vertical, may incorporate retaining structures	Hillside development and road construction where erosion hazard exists	Highly variable, dependent upon the site	Incorporate in grading ordinances, landowner responsible for design and construction. Periodic inspection required	Temporary construction impacts which are minor compared to total project. May increase cost of construction	No additional costs as limits currently set, consideration of erosion may modify development layout
C-2. Diversion of runoff away from graded areas	Install diversion dike or channel to carry overflow across the top of slopes through a stabilized drainage system	Graded areas which receive runoff from upslope areas	50-60%[b] reduction in sediment generation	Same as C-1. Inspection required after each storm event	Same as C-1. Flow has the potential to degrade the receiving water course	No additional costs as currently required
C-3. Minimize uninterrupted slope length	Terrace, step, or serrate slopes. Wattling also may be incorporated	Hillside development and road construction where erosion hazard exists	50-60%[b] reduction in sediment generation	Same as C-1	Same as C-1	Minimal additional costs associated with best grading techniques
C-4. Heavy use protection	Require diversion of drainage from and/or soil stabilization of heavily traveled areas early in project development	Access roads and equipment staging areas in hillside development and road construction	50% reduction in sediment generation	Same as C-1	Same as C-1	No additional costs as currently required
C-5. Vegetative cover of bare slopes	Require immediate revegetation of disturbed slopes at finished grade	Projects which require the creation or modification of slopes	Up to 97% reduction in sediment generation when vegetation is fully established	Incorporate in grading ordinances, landowner responsible for establishment and maintenance of vegetation	Requires irrigation water. Increases cost	No additional costs as currently required
C-6. Vegetative cover with soil stabilization techniques	Require use of mulches, matting, or chemical tackifiers, in conjunction with seeding operations	Steep slopes where erosion potential exists prior to vegetation establishment	Initial 70-90% reduction in sediment generation; effectiveness same as C-5 after vegetation established	Same as C-5	Same as C-5	Slight increase in costs
C-7. Temporary slope stabilization	Application of mulches or chemical tackifiers immediately following completion of rough grading	Graded areas subject to erosion prior to final grading	70-90% reduction in sediment generation during first year. Ineffective after one or two years	Incorporate in grading ordinance. Periodic inspection and maintenance required. Responsibility of landowner	Same as C-1	Moderate increase in costs

See footnotes at end of table.

TABLE IV-2 (Continued)

Control Measure	Description	Applicability	Approximate Effectiveness	Implementation Requirements	Potential Impacts[a]	Additional Costs to Developer
C-8. Limit grading operations to dry-weather period	Grading operations limited to dry-weather period with stabilization techniques prior to wet-weather periods	Hillside development and road construction where erosion hazard exists	70-90% reduction in sediment generation	Incorporate in grading ordinance. Periodic inspection required	Intensifies construction impacts during dry-weather period. May increase cost of construction	Larger the project, the longer the possible delays and duration of grading activities. Could result in high increase in cost
C-9. Limit exposure time	Limit interval between grading operations and project completion	Large hillside developments where erosion hazard exists	Up to 60% reduction in sediment generation	Incorporate in grading ordinances	Requires site-by-site grading, on-site construction impacts over extended period	Same as C-8
C-10. Limit disturbed area	Limit grading operations in inverse relation to existing slope at site	Hillside development and road construction	Up to 60% reduction in sediment generation	Incorporate in grading ordinance	Reduces developable area. Increases land required for project and may increase land acquisition costs	Same as C-8
C-11. Runoff management	Require protected waterways, controlled water and drainage systems, receiving streambank protection	Large developments and community drainage systems	50% reduction in sediment generation	Incorporate in grading ordinance. Landowner responsible for onsite management. Projects may expand present city DPW and Flood Control District programs	Same as C-1	No additional costs as currently required
C-12. Temporary sediment control	Require retention of sediment onsite through use of dikes, straw bales, filter berms, and/or filter fences during construction activities	Hillside developments and road construction where erosion hazard exists during construction	25-60% reduction in sediment load	Incorporate in grading ordinance. Landowner responsible for removal and disposal of trapped sediment after each storm event	Disposal of removed sediment. Slight increase in construction costs	No additional costs as currently required
C-13. Permanent sediment control	Require control of sediment with debris and sediment basins on a continuous basis	Large hillside developments and road construction where erosion hazard exists and will continue after project is completed	Up to 70% reduction in sediment load	Same as C-12	Disposal of removed sediment. Increased costs	Moderate increase in costs

SOURCE: J. B. Gilbert and Associates, Water Quality Control Investigation, Urban Runoff Construction Activities, and Agricultural Practices, August 1978.

[a] In addition to improved water quality and associated benefits.

[b] Effectiveness for Measure C-2 in conjunction with C-3.

TABLE IV-3
CONSTRUCTION ACTIVITIES: EROSION AND SEDIMENT CONTROL
MANAGEMENT AGENCIES, ESTIMATED COSTS AND IMPLEMENTATION SCHEDULE

Existing or Potentially Impacted Water Body[1]	Agency/Jurisdiction[2]	Estimated Additional[3] Annual Cost (1978)
A. Bays and Estuaries; Wetlands		
1. Upper (Lower) Newport Bay[5] and San Diego Creek	County of Orange	$200,000.
	City of Santa Ana	40,000.
	City of Orange	40,000.
	City of Irvine	80,000.
	City of Tustin	80,000.
	City of Newport Beach	120,000.
	City of Costa Mesa	40,000.
	Orange County Water District	0
	Orange County Sanitation District	0
	Irvine Ranch Water District	0
	Regents of the University of California(UC Irvine)	0
2. Bolsa-Chica Bay and Wetlands Complex	County of Orange	(Included in A.1)
	City of Huntington Beach	10,000.
3. Malibu Lagoon	County of Ventura	40,000.
	County of Los Angeles	80,000.
	City of Thousand Oaks	10,000.
B. Perennial Streams		
1. Santa Ana River - Main Stem	County of San Bernardino	20,000.
	City of Chino	2,000.
	City of Loma Linda	1,000.
	City of Rancho-Cucamonga	5,000.
	City of Redlands	1,000.
	City of San Bernardino	5,000.
	County of Riverside	20,000.
	City of Beaumont	1,000.
	City of Corona	1,000.
	City of Norco	1,000.
	City of Riverside	5,000.
	County of Orange	(Included in A.1)
	City of Anaheim	5,000.
	City of Placentia	2,000.
	City of Yorba Linda	3,000.
	San Bernardino County Flood Control District	0
	Riverside County Water Conservation & Flood Control District	0
	San Bernardino Valley MWD	0
	Western MWD	0
	Chino Basin MWD	0
2. San Juan Creek	County of Orange	40,000.
	City of San Juan Capistrano	5,000.
3. Aliso Creek	County of Orange	(Included in B.2)
4. Mountain/Foothill Streams	County of Riverside	5,000.
	County of Los Angeles	80,000.
	City of Los Angeles	(Included in B.2)
	County of Orange	(Included in B.2)
	County of San Bernardino	(Included in B.1)
C. Lakes/Reservoirs		
1. Castaic & Pyramid Lakes	County of Los Angeles	(Included in B.4)
2. Bouquet Reservoir	County of Los Angeles	(Included in B.4)
3. Lake Hughes; Lake Elizabeth	County of Los Angeles	(Included in B.4)
4. Lake Sherwood	County of Ventura	(Included in A.3)
5. Malibu Lake	County of Los Angeles	(Included in A.3)
6. Big Bear Lake	County of San Bernardino	(Included in B.1)
	Big Bear M.W.D.	0
	Big Bear Area Regional Wastewater Agency	0
7. Lake Mathews	County of Riverside	(Included in B.4)
8. Lake Hemet	County of Riverside	(Included in B.4)
9. Canyon Lake	County of Riverside	(Included in B.4)
10. Sulfur Creek Reservoir	County of Orange	(Included in B.2)
11. Lake Elsinore	County of Riverside	(Included in B.4)
	City of Lake Elsinore	2,000.
D. Harbors		
1. Los Angeles-Long Beach	City of Burbank	1,000.
	City of Bradbury	1,000.
	City of Duarte	1,000.
	City of Glendale	2,000.
	City of La Canada-Flintridge	2,000.
	City of Long Beach	2,000.
	City of Los Angeles	20,000.
	City of Monrovia	2,000.
	City of Montebello	1,000.
	City of Monterey Park	1,000.
	City of Pasadena	3,000.
	City of Pico Rivera	1,000.
	City of Sierra Madre	1,000.
	City of Whittier	1,000.
	County of Los Angeles	(Included in B.4)
2. Dana Point Harbor	County of Orange	(Included in B.2)
3. Avalon Harbor	City of Avalon	1,000.
	County of Los Angeles	(Included in B.4)
E. Coastal Resource Areas of Special Biological Significance and Marine Life Refuges	County of Los Angeles	20,000.
	County of Orange	20,000.
	City of Newport Beach	5,000.
	City of Laguna Beach	10,000.
	Estimated Total $/year (Newport Bay portion	$1,037,000. $ 600,000.)

Footnotes:

(1) Bodies of water identified as having existing or potential sediment-related impacts.

(2) Designated management agencies where growth and erosion potential identified as moderate or greater. Principally related to hillside areas. U. S. Forest Service (Angeles, San Bernardino and Cleveland National Forests) responsible for National Forest areas. State of California, CALTRANS, responsible for erosion and sediment control from all state federal funded highways and freeways.

(3) Costs shown are estimates of the additional average annual cost of the named agency in 1) modifying ordinances and 2) administering the erosion and sediment controls. Financing of this element of the plan to be borne entirely by local and/or development fees.

(4) The process called for to be implemented on or before October 1, 1979.

(5) From NIWA Plan Element Report.

- Greater amounts of vegetation resulting from preservation of soil productivity could support greater amounts of animal life in the area after construction.
- The visual character of the site could potentially be improved due to increased amounts, and possibly different kinds, of vegetation.
- Ground water recharge would potentially be increased during construction as a result of controlling runoff. This impact would be minor, since the amount of water involved is relatively small compared to other ground water recharge sources.
- Reduction of runoff flows from construction sites could, to some degree, reduce the flood potential and, therefore, reduce public hazards. This would be a minor impact, since the amount of water involved is small compared to major flood sources.
- A reduction in flow volume would result in a reduced potential for erosion in storm channels. It would be necessary, however, to assess the total effect on erosion in storm channels on a case-by-case basis (see Adverse Impacts, below).
- Increases in downstream siltation could be less, resulting in reduced costs for dredging of channels, reservoirs, and harbors.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Reduced erosion would decrease the supply of sediment that is transported to beaches, which might ultimately contribute to the deterioration of these beaches. *The supply of sand to the beaches might be artificially augmented.*
- Since sediment-laden water causes less erosion than clean water, erosion in storm channels could increase. *The total effect on erosion in storm channels resulting from implementation of this action should be assessed on a case-by-case basis* (see also Beneficial Impacts, above).
- Techniques for decreasing erosion could have considerable visual impact during and after construction. *These impacts could be mitigated if literature prepared by landscape architects were distributed to developers indicating how visual amenities might be most enhanced and least degraded by use of the recommended materials and techniques.*
- Some of the erosion and grading control ordinances could slightly increase the use of natural resources such as construction materials and energy. Conservation of resources should be considered during design and construction.
- Increased regulation could result in construction delays. *To avoid such delays the permitting process should be streamlined as much as possible by simplifying procedures encouraging coordination among permitting agencies.*
- Increased levels of governmental activity could result in increased resentment of government and less cooperative attitudes on the part of business and the public. *Local governments should carefully evaluate the benefits that could be achieved with each contemplated increase in governmental activity. Materials should be prepared for distribution to developers, explaining the need for each action and its specific intent, providing cost-benefit information, and soliciting cooperation and suggestions.*

- Costs involved in developing such ordinances would include staff time for studying and drafting the ordinances, the printing and distribution of draft ordinances to interested parties, the holding of hearings for inputs from the public and other public agencies that might be affected, the legal staff review time, and the final adoption of ordinances and their publication and distribution. These costs would vary depending on many factors, including the degree of change required from existing ordinances and the size of the communities involved. *A measure to reduce the administrating agencies' financial burden caused by ordinance development would involve implementation of an increased levy on building permits. The developer would have to internalize the cost of developing the ordinance.*

- Administrative and enforcement costs would increase. Stringent enforcement of these ordinances would probably require additional public agency personnel. It has been estimated that technical review of grading permit applications for erosion potential and water quality impacts would require an additional five to ten staff persons for the South Coast Planning Area. This cost, including overhead, would be approximately $1,000,000 annually. It can be assumed, however, that this would require thorough on-site inspections which might require additional field personnel. *To compensate for some of these costs there would be some unquantified reduction in erosion that would reduce external costs that had previously accrued downstream. These added costs might also be reduced by applying the mitigation measures identified in the two preceding impacts.*
- Development costs would increase. It can be assumed that these costs would ultimately be borne by the consumer since the added cost would be reflected in the purchase price. It has been estimated that erosion control costs range from $300 to $500 per acre, principally for vegetative measures, and from $1,000 to $1,500 per acre for combined vegetative and structural systems (Ref. 4).[a] *Measures to mitigate these costs would include in-depth studies directed toward determining the cost-benefit effectiveness of the various methods being considered to control erosion on construction sites. Regulations should be carefully written to achieve the maximum benefits with the minimum level of financial impact. Some of these costs might also be offset in the long run by reduced insurance costs.*

Action 9: **Distribute homeowner's guides for new developments containing information on erosion control and prevention of landsliding.**

Action 10: **Conduct special education and training programs in erosion and sediment control application for the construction industry and local governments.**

Homeowners often create the same kinds of erosion and landslide hazards that exist during development construction through construction projects, gardening activities, or site modifications. These actions are intended to educate homeowners, construction industry personnel, and local government planners in ways they can help mitigate erosion and landslide hazards related to on-site activities.

BENEFICIAL IMPACTS

The beneficial impacts of Actions 9 and 10 would be the same as those described for Actions 7 and 8.

---

[a] It is not clear whether these estimates include the actual added grading that might be required.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Reduced erosion would decrease the supply of sediment that is transported to beaches, which might ultimately contribute to the deterioration of these beaches. *The supply of sand to the beaches might be artificially augmented.*
- Since sediment-laden water causes less erosion than clear water, erosion in storm channels could increase. *The total effect on erosion in storm channels resulting from implementation of this action should be assessed on a case-by-case basis* (see also Beneficial Impacts, Actions 7 and 8).
- Techniques promoted for decreasing erosion could have considerable visual impact. *These impacts could be mitigated if literature prepared by landscape architects were distributed, indicating how visual amenities might be most enhanced and least degraded by use of the recommended materials and techniques.*
- Some of the erosion control techniques recommended could slightly increase the use of natural resources such as construction materials and energy. *Conservation of resources should be considered during design and construction.*
- The costs of a program for distributing information to homeowners would depend on the methods of information dissemination selected. Basic costs could involve preparation of audio visual aids, advertising materials, the time of municipal personnel involved in their presentation, and printing costs. *Cost savings could be realized by soliciting the cooperation of involved lending institutions where display advertising could be shown and literature distributed. Direct mail costs could be saved by "piggybacking" literature to property owners through the assessor's departments mailings and through banks' and savings and loan associations' mailings.*
- The estimated costs of education and training programs for construction and government personnel are listed in the following table.

TABLE IV-4

ESTIMATED COSTS OF EROSION AND SEDIMENT CONTROL TRAINING FOR CONSTRUCTION AND GOVERNMENT PERSONNEL

Agency/Jurisdiction	Estimated Cost	Source of Funds
County of Los Angeles	$ 30,000	Local
City of Los Angeles	5,000	Local
County of Orange	15,000	Local
County of San Bernardino	15,000	Local
County of Riverside	15,000	Local
County of Ventura	7,500	Local
CALTRANS	5,000	State
State Department of Conservation	10,000	State
Resource Conservation District	5,000	Local, State Federal
Total	$107,500	

AGRICULTURAL PRACTICES

The draft 208 Plan contains the following three actions aimed at modifying existing agricultural practices: developing and adopting local ordinances requiring Resource Conservation Plans for all areas in agricultural use; expanding Resource Conservation Plans (RCPs) for consistency with 208 Best Management Practices for agriculture; and initiating long-range Best Management Practices and implementation strategies for dairy wastes in the Chino Valley.

Action 11: **Develop and adopt an ordinance that requires Resource Conservation Plans for all areas in agricultural use.**

RCPs are currently written only when requested by a land user. These plans, which are prepared by Soil Conservation Service and Resource Conservation District personnel, recommend management practices that can improve or preserve the productivity of the land. They may include advice on irrigation practices, cover crops, contouring, fertilization, and other topics. Prevention of soil erosion is one basic aim of these plans. Compliance is voluntary on the part of the user, who may implement all or part of a plan.

Of the approximately 600,000 acres of agricultural land in the South Coast Planning Area, about 400,000 acres are covered by RCPs (Refs. 5, 6). Of those operations having RCPs, considerable variation exists as to how much of each RCP is implemented. The above action is an attempt to achieve more universal adoption of effective management practices on agricultural land.

The nature of the impacts to be expected from this action are described below. The extent to which each impact would occur depends on the extent to which the provisions of the RCPs were made mandatory, and on the extent to which such provisions are currently being practiced by users without RCPs.

BENEFICIAL IMPACTS

- According to recent research, improved ground water quality could be expected from the application of new irrigation and fertilizer management practices recommended in the RCPs (Ref. 4). New irrigation techniques include the use of sprinkler and drip irrigation systems in conjunction with minimized leaching fractions. Studies at the U.S. Sanitary Laboratory at Riverside indicate that irrigation techniques that improve water use efficiency reduce both the total salt loading of the soil and the salt content of the return flow. These methods have not been studied long enough to positively determine the long-term effects on soil and water, but the consensus among experts in the field is that the methods are safe when applied correctly and carefully monitored (see Adverse Impacts, below). Improved fertilization practices include selective placement techniques, improved timing of applications, and the use of slow-release fertilizers. Increased efficiency of fertilizer application decreases the presence in the soil of excess nutrients, which contribute to water pollution.
- Improved irrigation techniques could conserve substantial amounts of water.
- Energy savings could be realized from improved irrigation and fertilizer management.
- Retrieval of tailwater for disposal or reuse could improve surface water quality. Decreased discharges of sediment, pesticide, heavy metals, and phosphates to surface waters might result.
- Improved erosion control practices could prevent loss of soil productivity.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Recommendations for limits on the use of fertilizer in certain sensitive areas could result in decreased agricultural productivity in those areas. *Information, training, and assistance for farmers affected by these regulations would ensure that techniques promoting maximum fertilizer efficiency were used, so that impacts from fertilizer limits would be minimized.*

- Irrigation methods involving minimized leaching fractions have not been studied long enough to positively determine the long-term effects on soil and water, but the consensus among experts in the field is that the methods are safe when applied correctly and carefully monitored. It is possible that clogging of the soil by salt precipitates could occur, but experts indicate that the use of effective management techniques should prevent this problem.

- Increased levels of governmental activity could result in increased resentment of the government and less cooperative attitudes on the part of business and the public. *Local governments should carefully evaluate the benefits to be achieved with each contemplated increase in governmental activity. Materials should be prepared for distribution to farm owners and workers, explaining the need for each action and its specific intent, providing cost-benefit information, and soliciting cooperation and suggestions.*

- Cost savings could result from the use of less water and fertilizer. The following increased expenses could occur, however, which might offset these savings.

  1. Capital costs of new irrigation and tailwater recovery systems
  2. Increased training required for farm workers
  3. Possible increased labor costs
  4. Increased costs of educational and publicity programs to improve public acceptance
  5. Increased planning and management costs
  6. Increased regulation and enforcement costs
  7. Continued costs of research and testing which might be needed to validate and improve the methods being implemented.

The total cost of developing and adopting an ordinance for each of the four counties involved would be about $80,000. The total cost of preparing the required Resource Conservation Plans would be about $560,000. This assumes the preparation of approximately 700 additional plans.

Increased agricultural costs would be passed along to the consumer, and uncompensated increases in Soil Conservation Service costs would be passed to the taxpayer.

Techniques for mitigating cost increases might include the arrangement of low-cost government loans or the formation of cooperative associations for buying and maintaining new equipment. Also, studies should be done to determine the cost-benefit effectiveness of the various techniques being considered, and Resource Conservation Plans should be written to achieve maximum benefits with the minimum level of financial impacts.

Action 12: **Expand Resource Conservation Plans to be consistent with 208 Plan Best Management Practices for agriculture.**

Resource Conservation Plans, as written now, incorporate most of the Best Management Practices included in the draft 208 Plan. Compliance with this action would involve a review of all conservation

plans and changing an estimated 30 percent of those currently in use (Ref. 7). Except for the costs, the nature of the impacts that would result from this action are the same as those described for Action 11. The extent to which each impact would occur depends on the amount of revision necessary for the affected RCPs.

The cost of this action would be about $99,000. This assumes the review and revision of 2,467 existing conservation plans.

Action 13: Develop long-range Best Management Practices and implementation strategies for dairy wastes in the Chino Valley.

No direct impacts will occur from the action as written, since no provisions for implementation are included.

SALINE WATER INTRUSION

The draft 208 Plan recommends maintaining current management programs for control of saline water intrusion in coastal area aquifers.

Action 14: Maintain existing management programs for control of saline water intrusion.

Maintaining these programs would cause no change from existing impacts.

UNAVOIDABLE ADVERSE IMPACTS

Implementation of measures to control nonpoint source pollution as proposed in the draft 208 Plan would result in a number of adverse environmental impacts. Of the mitigation measures proposed to reduce the severity of these adverse impacts, most cannot be assumed to be completely implementable, enforceable, and/or effective. Given this premise, most of the adverse impacts discussed above are considered unavoidable. Their magnitude and significance would vary, however, depending on the relative value placed on them by the general public, private interests, and regulatory agencies.

The major portion of the unavoidable adverse impacts involve increased costs that would directly result from the development and the implementation of the proposed programs. The costs would be borne by both the public and private sectors of the economy, although the actual amount cannot be estimated at this time. Total dollar costs of the proposed actions have been minimized, however, since most of the actions call for noncapital-intensive, nonstructural approaches to control nonpoint source pollution. Implementation costs and other unavoidable adverse impacts are shown in Table IV-5.

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Although water quality would be improved, implementation of the Nonpoint Source Waste, Management Plan could preclude the long-term beneficial use of certain items, e.g., financial resources, energy, beaches, soil productivity, and visual quality.

Diverting public funds for program implementation could delay funding of other beneficial programs or projects. A portion of private working capital would also be diverted from planned investments to implement some of the pollution control measures. The energy requirements associated with some of the actions of this element of the 208 Plan are also somewhat higher than those of current practices.

TABLE IV-5

NONPOINT SOURCE WASTE MANAGEMENT PLAN
SUMMARY UNAVOIDABLE ADVERSE IMPACTS

Potential Unavoidable Adverse Impacts[a]	Recommended Actions													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Potential decrease in sediments/nutrients for aquatic and marine biota resulting from reduced runoff volumes.			No direct impacts	No direct impacts	No direct impacts	X							No direct impacts	No direct impacts
Increased potential for accidental ground water contamination resulting from increased ground water recharge						X								
Potential increase in slope failures, waterlogging, ponding, seepages, and/or salt loading in water supplies						X								
Potential decrease in agricultural productivity resulting from decreased fertilizer use											X	X		
Potential salt buildup in soil if recommended irrigation techniques not administered and monitored properly											X	X		
Potential increase in storm channel erosion resulting from clearer water flows							X	X	X	X				
Decrease in supply of sediment to beaches resulting from errors in controls							X	X	X	X				
Impairment of visual quality resulting from use of recommended grading/erosion materials and techniques							X	X	X	X				
Increased use of natural resources, including energy						X	X	X	X	X				
Slight increase in the demand for landfill capacity	X	X												
Construction delays						X	X	X						
Potential for increased public resentment of government regulations						X	X	X			X	X		
Increased development costs, which would be passed to the buyer	X	X					X	X						
Additional time and costs associated with planning, administration, and operation							X	X	X					
Approximately $107,500 required for erosion control training programs										X				
Development and implementation costs for hazardous spill contingency plans of $250,000	X	X												
Approximately $640,000 required for developing and implementing ordinance requiring resource conservation plans											X	X		

[a] Since the recommended mitigation measures cannot be assumed to be totally implementable, enforceable, and/or effective, most of the adverse impacts were considered to be unavoidable. The significance of these adverse impacts, however, would be variable.

According to the Soil Conservation Service, salt buildup should not occur if the recommended irrigation practices are administered properly and carefully monitored. If these precautions are not observed, however, there could be a loss of soil productivity. Some loss in productivity could also be experienced as a result of limiting the amount of fertilizer that can be used.

Some loss in sediments for beach replenishment may occur with implementation of erosion controls. The suggested techniques to reduce runoff and erosion from construction sites, such as concrete terracing and swales, could also reduce the long-term visual quality of affected areas.

IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES

Generally, irreversible impacts are associated with the effects resulting from construction activities on a proposed project. The Nonpoint Source Waste Management Plan, however, emphasizes nonstructural approaches to pollution control. As a result of the unavoidable adverse impacts associated with this element of the draft 208 Plan, only the commitment of money and other selected natural resources are considered irreversible.

GROWTH-INDUCING IMPACTS

Implementation of the Nonpoint Waste Management Plan would not remove obstacles to growth or otherwise enhance the opportunity or desirability for growth.

EFFECTS FOUND NOT TO BE SIGNIFICANT

All environmental effects identified in the preparation of this document are included, regardless of their degree of significance. In many cases, because of the level of specificity of the plan, it has not been possible to determine accurately the relative significance or insignificance of an impact. In other cases, impacts have been identified as being relatively insignificant. In no case, however, are any impacts omitted because of their lack of significance.

REFERENCES

1. U.S. Government Federal Water Pollution Control Act Amendments of 1972 (PL 92-500), Section 502, October 1972.

2. Association of Bay Area Governments (ABAG). *Draft Environmental Management Plan Vol. II,* December 1977.

3. San Bernardino County Environmental Health Services Department. *Tasks 2-7 Contingency Plans for Clean-Up and Containment of Hazardous Substances,* April 1978.

4. Gilbert, J. B. and Associates. *Water Quality Control Investigation: Urban Runoff, Construction Activities, and Agricultural Practices,* August 1978.

5. Daniel, Mann, Johnson, & Mendenhall. *Preliminary Environmental Assessment of Six Growth Forecasts for the South Coast Planning Area,* May 1978.

6. Soil Conservation Service and Resource Conservation District Staff. Personal Communication, September 1978.

7. Smith, Tom. Southern California Association of Governments Personal Communication, August 1978.

CHAPTER 2 — MUNICIPAL AND INDUSTRIAL WASTE MANAGEMENT PLAN

CHAPTER 2

Municipal and Industrial Waste Management Plan

The municipal and industrial wastewater management element of the draft 208 Plan is concerned with point sources of water pollution. The element focuses on municipal wastewater treatment facilities, which number more than seventy throughout the South Coast Planning Area. Sections of this element that deal with these facilities are principally concerned with achieving consistency between (1) future municipal wastewater facilities development and the areawide SCAG-78 growth forecast, and (2) municipal wastewater facilities development and the Air Quality Management Plan. To achieve such consistency, several specific actions are recommended.

Sections dealing with the needs of industrial pretreatment, ocean disposal, and industrial waste treatment systems are also addressed in this element. Although policies have been developed for each of these topics, no specific actions for implementation are currently recommended. These sections have, therefore, been deleted from this environmental assessment.

The remaining section of the municipal and industrial waste management element deals with the Malibu/Topanga unsewered area in Los Angeles County. In this section several actions are recommended involving alternatives to centralized wastewater treatment systems.

CONSISTENCY OF WASTEWATER FACILITIES WITH AREAWIDE GROWTH FORECAST

The draft 208 Plan recommends that municipal treatment works be planned, designed, and constructed to accommodate the growth shown in the draft SCAG-78 forecast. It is also recommended that the 1978-1980 Clean Water Grant Project Priority List be prepared to fund facilities on a schedule consistent with the facilities' needs identified in the draft 208 Plan. Lastly, the plan recommends that the Regional Water Quality Control Boards revise the National Pollutant Discharge Elementation System (NPDES) permits to ensure that flows do not exceed those projected in the 208 Plan.

Action 15: **Plan, design, and construct the municipal facilities necessary to meet the municipal waste treatment system needs shown in the 1978/1979 SWRCB Clean Water Grant Project Priority List consistent with the wastewater flow forecasts shown in Table IV-6A.**

Over thirty major wastewater facility planning areas and over seventy wastewater treatment plants currently exist in the South Coast Planning Area (Ref. 1). Table IV-6A presents projections of wastewater flows for each wastewater facility planning area based on the SCAG-78 areawide growth forecast policy. Table IV-6B compares the forecasted wastewater flows with existing and currently planned wastewater treatment plant capacities.

TABLE IV-6A

SUMMARY: FORECASTED WASTEWATER FLOWS AND EXISTING AND PRESENTLY PLANNED TREATMENT PLANT CAPACITIES

Wastewater Facility Planning Area	Year 1976	Year 2000
Los Angeles County		
1. Los Angeles County Sanitation Districts, Joint Outfall System		
Population (000)[1]	3,660.2	3,947.2
Average flow (mgd)[2]	417	521
Presently planned capacity (mgd)[3]	497.5	450[4]
2. City of Los Angeles, Hyperion System		
Population (000)	2,973.4	3,248.4
Average flow (mgd)	378	413
Presently planned capacity (mgd)	409	431
3. Terminal Island Treatment Plant		
Population (000)	104.3	123.5
Average flow (mgd)	21	30.1
Presently planned capacity (mgd)	30	30
4a. LACSD #26 WRP		
Population (000)	325	49.7
Average flow (mgd)	2.8	4.2
Presently planned capacity (mgd)	5.0	5.0
4b. LACSD #32 WRP		
Population (000)	16.0	28.8
Average flow (mgd)	1.3	2.5
Presently planned capacity (mgd)	4.5	4.5
5a. Las Virgenes MWD - Triunfo CSD (Tapia WRP)		
Population (000)*	38.7 (1977)	79.7
Average flow (mgd)	3.9	8.0
Presently planned capacity (mgd)	8.0	8.0
6. La Canada/Flintridge		
Population (000)	19.3	20.1
Average flow (mgd)	0.2	0.2
Presently planned capacity (mgd)	2.5	No plant
7. Crescenta Valley		
Population (000)	18.3	19.3
Average flow (mgd)	2.1	22.2
Presently planned capacity (mgd)	No plant	No plant
8. City of Avalon		
Population (000)	1.6	4.0
Average flow (mgd)	0.2	0.6
Presently planned capacity (mgd)	0.75	0.75
Orange County		
1. County Sanitation Districts of Orange County		
Population (000)*	1,510.7	2,018.9
Average flow (mgd)	172.2	230.1
Presently planned capacity (mgd)	184	301
2. Aliso Water Management Agency		
Population (000)*	83.7	238.9
Average flow (mgd)	7.5	21.3
Presently planned capacity (mgd)	17.05 (3.2)[8]	27.1[7] (25)[8]
3. Southeast Regional Reclamation Agency		
Population (000)*		
Average flow (mgd)	7.8	21.2
Presently planned capacity (mgd)	16.3 (9.8)[8]	2.3[7] (36.1)[8]

See footnotes at end of table.

TABLE IV-6A (Continued)

Wastewater Facility Planning Area	Year 1976	Year 2000
Orange County (Cont'd.)		
4. Irvine Ranch Water District		
Population (000)*	45.0	278.4
Average flow (mgd)	4.3	41.8
Presently planned capacity (mgd)	7.5	30
5. Carbon Canyon (CSDOC)		
Population (000)	0.8	1.6
Average flow (mgd)	0.07	0.15
Presently planned capacity (mgd)	No plant	No plant
Riverside County		
1. Riverside Planning Area (Regional Plant)		
Population (000)	200.5	323.9
Average flow (mgd)	18.9	37.3
Presently planned capacity (mgd)	24	41
2a. EMWD, Hemet-San Jacinto TP		
Population (000)	43.0	78.5
Average flow (mgd)	3.0	7.1
Presently planned capacity (mgd)	5.0	7.5
2b. EMWD, Perris Valley TP		
Population (000)	13.4	26.9
Average flow (mgd)	0.4	2.0
Presently planned capacity (mgd)	0.5	2.0
2c. EMWD, Sun City TP		
Population (000)	8.8	13.3
Average flow (mgd)	0.6	1.3
Presently planned capacity (mgd)	1.0	2.0
2d. EMWD, Sunnymead TP		
Population (000)	18.2	34.1
Average flow (mgd)	0.7	3.0
Presently planned capacity (mgd)	1.0	3.0
3. Corona Planning Area		
Population (000)	58.7	107.9
Average flow (mgd)	4.2	9.9
Presently planned capacity (mgd)	5.5	10.0
4. City of Beaumont		
Population (000)	6.0	10.0
Average flow (mgd)	0.4	0.9
Presently planned capacity (mgd)	0.7	1.2
5. San Jacinto Mountain Area Water Study Agency[5]		
Population (000)	5.7	9.4
Average flow (mgd)	0.1	0.3
Presently planned capacity (mgd)	0.2	0.6
6. March Air Force Base		
Population (000)	4.3	4.5
Average flow (mgd)	0.5	0.5
Presently planned capacity (mgd)	1.0	1.0
7. Elsinore Valley MWD		
Population (000)[6],*	10.7	22.9
Average flow (mgd)	0.3	1.1
Presently planned capacity (mgd)	0.45	0.6[7]
8. Lake Hemet MWD		
Population (000)[6]	0.05	0.07
Average flow (mgd)	0.01	0.02
Presently planned capacity	0.1	0.1

See footnotes at end of table.

TABLE IV-6A (Continued)

Wastewater Facility Planning Area	Year 1976	Year 2000
San Bernardino County		
1. San Bernardino Valley MWD		
Population (000)	302.4	480.7
Average flow (mgd)	21.1	44.2
Presently planned capacity	43.4	47.9[7]
2. Chino Basin MWD		
Population (000) *	242.1	445.2
Average flow (mgd)	20.8	46.3
Presently planned capacity (mgd)	19.6	58.5
3. Big Bear		
Population (000)[6,*]	22.8	32.0
Average flow (mgd)	1.6	2.2
Presently planned capacity (mgd)	1.5	3.1
4. Running Springs CWD		
Population (000)[6]	4.7	12.8
Average flow (mgd)	0.21	0.5
Presently planned capacity (mgd)	0.5	1.0
5. Lytle Creek		
Population (000)*	0.5	2.2[6]
Average flow (mgd)	No plant	0.12
Presently planned capacity (mgd)	No plant	No plant
6. Mill Creek		
Population (000)*	0.2	0.4
Average flow (mgd)	No plant	No plant
Presently planned capacity (mgd)	No plant	No plant

Note: Refer to Appendix E of this document, and Plan Element Report 2.2, for detailed wastewater flow forecasts and presently planned treatment plant capacity.

* Population forecasts have been revised from preliminary forecasts published August, 1978 in Watermarks.

1. Population forecasts represent translations of the draft SCAG-78 growth forecast policy to facility planning areas. Population represents total resident population, sewered and unsewered, unless indicated otherwise.
2. Per capita flow estimates provided by Los Angeles, Santa Ana, and San Diego Regional Water Quality Control Boards, based on results of previous facilities and basin planning. See Appendix E.
3. Provided by Los Angeles, Santa Ana, and San Diego Regional Water Quality Control Boards, based on results of previous facilities and basin planning, unless indicated otherwise. See Appendix E.
4. Reduction in capacity due to installation of secondary treatment.
5. Represents sewered population only; includes seasonal population
6. Includes seasonal population.
7. See Appendix E for source of planned capacity estimate.
8. Ocean outfall capacity indicated in parentheses.

TABLE IV-6B

YEARS BY WHICH FORECASTED WASTEWATER FLOWS WOULD EXCEED EXISTING AND PRESENTLY PLANNED TREATMENT PLANT CAPACITIES

Facility Planning Area	Year by Which Forecasted Wastewater Flows Would Exceed Existing (1976) Treatment Capacity[1]	Years by Which Forecasted Wastewater Flows Would Exceed Presently Planned Treatment Capacity[1]
Los Angeles County		
1. Los Angeles County Sanitation Districts, JOS	2000[2,3]	1985[2,3]
2. City of Los Angeles, Hyperion System	Beyond 2000[2,4]	1980[2,4]
3. Terminal Island Treatment Plant	2000	2000
4a. LACSD #26 WRP	Beyond 2000	Beyond 2000
4b. LACSD #32 WRP	Beyond 2000	Beyond 2000
5a. Las Virgenes MWD - Triunfo CSD (Tapia WRP)	2000	2000
6. La Canada/Flintridge	Not applicable - no plant	Not applicable - no plant
7. Crescenta Valley	Not applicable - no plant	Not applicable - no plant
8. City of Avalon	Beyond 2000	Beyond 2000
Orange County		
1. County Sanitation Districts of Orange County	1980	Beyond 2000
2. Aliso Water Management Agency	1995[5]	Beyond 2000[5]
3. Southeast Regional Reclamation Agency	1990[6]	Beyond 2000[6]
4. Irvine Ranch Water District	1980	1985
5. Carbon Canyon (CSDOC)	Not applicable - no plant	Not applicable - no plant
Riverside County		
1. Riverside Planning Area	1985	Beyond 2000
2a. EMWD, Hemet-San Jacinto TP	1985	1985
2b. EMWD, Perris Valley TP	1980	1985
2c. EMWD, Sun City TP	1985	1985
2d. EMWD, Sunnymead TP	1980	1990
3. Corona Planning Area	1985	Beyond 2000
4. City of Beaumont	1985	Beyond 2000
5. San Jacinto Mtn. Area Water Study Agency	1980	Beyond 2000
6. March Air Force Base	Beyond 2000	Beyond 2000
7. Elsinore Valley MWD	1980	1985
8. Lake Hemet MWD	Beyond 2000	Beyond 2000
San Bernardino County		
1. San Bernardino Valley MWD	2000[7]	Beyond 2000[7]
2. Chino Basin MWD	1976[8]	Beyond 2000[8]
3. Big Bear	1976	Beyond 2000
4. Running Springs CWD	1985	Beyond 2000
5. Lytle Creek	Not applicable - no plant	Not applicable - no plant
6. Mill Creek	Not applicable - no plant	Not applicable - no plant

1. See Appendix E for more detailed data.
2. Due to installation of secondary treatment.
3. Joint Water Pollution Control Plant.
4. Hyperion Treatment Plant.
5. Applies to entire AWMA planning area.
6. Applies to entire SERRA planning area.
7. Applies to the entire SBVMWD planning area. For Rialto plant, forecasted flows would exceed existing and presently planned capacity by the year 1985. For Redlands plant, forecasted flows would exceed existing and presently planned capacity by the year 2000. For San Bernardino and Colton plants, forecasted flows would exceed existing and presently planned capacity beyond the year 2000.
8. Regional Plant I.

Impacts resulting from these activities, as well as associated effluent discharges to the marine environment, are addressed below in a generic manner. As required by law, specific impacts emanating from activities occurring in a given location have been or will be assessed on a case-by-case basis subsequent to the development of detailed facilities (Refs. 2, 3).

BENEFICIAL IMPACTS

- This action would provide capacity for projected growth, potentially reducing health hazards and water quality problems related to overloaded treatment facilities. However, growth would have to be regulated through land use regulations consistent with the draft SCAG-78 Growth Forecast Policy.
- Construction of new plants as recommended should enable local governments to meet effluent standards.
- Increased effluent discharges to surface waters could increase the available freshwater habitat for aquatic insects and algae.
- Increased release of particulate material into the marine environment might provide more solid substrate for small organisms in the water column. Since most of the effluent reaching the marine environment is generated in and discharged from Los Angeles and Orange Counties, the above impact would result from increased capacity in these two counties only.
- Benefical reuse of wastewater will be increased by capacity expansions and upgrading of treatment facilities. For example, at the Tapia plant on Malibu Creek secondary treated effluent is being used for irrigation, and a dual water system is being considered for the future. Upgrading of capacity is proposed for the San Clemente plant along with a demineralization facility to provide effluent reuse. At the Irvine Ranch facility, proposed for expansion, secondary treated wastewater is stored in a reservoir and distributed for irrigation. The new Big Bear Regional Wastewater Plant will use reclaimed water for irrigating the Lucerne and Big Bear Valleys. Expanded facilities at the Perris Valley regional facility will be used to provide secondary treated effluent for irrigating cropland; the CSDOC Plant 1 will use increased quantities of treated effluent in saltwater intrusion-injection wells. The five water reclamation plants of Los Angeles County's Joint Outfall System will be expanding water reuse for industrial and agricultural purposes as well as for ground water recharge.
- Increased populations in Riverside and San Bernardino Counties would increase the discharge of secondary effluent to the normally dry portions of the Santa Ana River (Reach 3), thereby increasing ground water recharge.
- Expansion of the Chino Basin Municipal Water District's 20 mgd tertiary treatment plant would provide the needed treatment for effluent to be discharged to Mell Creek, a tributary to Reach 3 of the Santa Ana River.
- Reduction in health hazards related to the improvement of inoperative or defective treatment plants should be realized.
- Increased employment opportunities would result from implementation of these projects.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Marine biological resources could be adversely affected by increased point source discharges. The magnitude of impact would be related to the volume of material discharged and the chemical entities it contains. Since most of the sewage effluent reaching the marine environment is generated

in and discharged from Los Angeles and Orange Counties, the above impacts as well as all other marine related impacts, would result from capacity expansions in Los Angeles and Orange Counties only. *The effect of the added quantities of wastes dicharges, would generally be proportional to population increases and would, in part, be mitigated by the federal requirements for secondary treatment of all wastes discharged into the marine environment.*

- Increased release of particulate materials into the marine environment could result in increased turbidity in the water column and altered water temperatures. *The effect of increased particulate material discharge would in part be mitigated by the federal requirements for secondary treatment of all wastes discharged into the marine environment.*

- Secondary effluent discharges would contain an abundance of fertilizer salts, which would promote the formation of phytoplankton blooms. Similarly, heavy metals not removed by secondary treatment might become available for organism uptake. *Industrial pretreatment would potentially reduce the concentration of heavy metals in secondary effluent released to the marine environment.*

- The present practice of discharging municipal wastes receiving, for the most part, only primary treatment into the marine environment has resulted in the discharge of a higher BOD effluent than would be the case with conversion to complete secondary treatment. Presently, the areas around municipal waste outfalls tend to be areas of dense and varied populations. Many fish species, for example, are attracted to the area of the outfalls. It is not definitely known whether the attraction of the fish is the direct result of the nutrients available in the waste, or the indirect result of the presence of high populations of organisms feeding on the discharged wastes which the fish come to eat. In either event, with conversion to secondary treatment, waste discharges will have considerably reduced quantities of organic material present, particularly those organics most readily biodegradable, and therefore, most useful as nutritional substrate for heterotrophic organisms. *Mitigation of this potential impact would require establishment of the existence of bioenhancement as stated in the Enclosed Bays and Estuaries Policy in order for the waste to continue to be discharged. In addition, appropriate exercise of authority for waiver of secondary treatment requirements would also mitigate this impact.*

- Increased release of effluent containing particulate material from Los Angeles and Orange Counties to the marine environment could change the nature of the benthic substrate and thus its suitability as habitat. *This impact would be mitigated by the federal requirements for secondary treatment of all wastes discharged into the marine environment.*

- Assuming that operations will be consistent with the requirements for secondary treatment, the production of sewage sludge volumes would be increased. Disposition of this sludge in an environmentally acceptable manner is currently being addressed by the Los Angeles/Orange County Metropolitan Area (LA/OMA) Project. *Inherent in the development of the long-range Wastewater Solids Management Plan is the avoidance or mitigation of all significant adverse impacts potentially associated with the processing, reuse, and/or land disposal of sludge.*

- The amount of secondary effluent discharged to Reach 4 of the Santa Ana River for percolation by cities in San Bernardino County would be increased. Reach 4 of the Santa Ana River is normally dry except for times of storm-induced runoff. It is, however, projected that this reach of the river may experience continuous flow by the early 1980s. If this reach does experience continous flow reaching that portion of Reach 3 where tertiary treatment of wastewater is required, tertiary treatment may be required for those cities currently discharging secondary treated effluent to Reach 4. *This may be accomplished by establishing a regional tertiary treatment facility or by upgrading existing plants to tertiary treatment. In addition this potential impact could be mitigated by revising the SCAG-78 growth forecast downward to avoid a continuous flow situation.*

- Increased effluent discharges to surface waters could promote algae blooms and attendant odor problems during certain times of the year.
- Poorly designed or operated facilities may cause local odor problems during facility operations. *Proper inspection measures to insure that the plant is both properly designed and operated would partially mitigate this impact.* Odors, however, to some extent will still exist even if the facility is properly designed and operated. *Therefore another potential mitigation measure would be to completely enclose the facility. It should be noted that the cost of such a mitigant would be high.*
- Localized increases in carbon monoxide could result from facility construction and operation. *These emissions could be reduced by utilization of appropriate emission control devices.*
- Treatment-plant operations would result in energy consumption. *Production of methane gas from sludge digestion operations could partially, if not totally, reduce this demand for importation of energy to the site.*
- Increase in ambient noise levels in areas adjacent to the treatment plant could result from construction and, to a lesser degree, treatment plant operation. *Such an impact can only be partially mitigated by noise abatment devices on construction equipment (e.g., mufflers).*
- Temporary local dust problems could occur during construction of the facilities. *Proper dust control measures such as increasing the moisture content of the soil would partially mitigate this impact.*
- Construction activities would result in the consumption of electricity, gas, and diesel fuel.
- Wildlife habitats could be reduced as a result of construction activities, depending on their specific location. *For the construction of a new facility mitigation of such adverse ecological impacts would require careful site selection.* Expansion of existing facilities are likely to be less destructive since the area around the plant is likely to have been previously disrupted.
- Construction activities could increase on-site erosion and sediment yield. *Proper construction and grading practices could minimize this impact.*
- Treatment plant construction would result in the consumption of irretrievable natural resources, e. g., sand, gravel, cement, etc.
- Traffic patterns could be adversely affected during construction activities. This impact would be only temporary and is not expected to be significant.
- The construction of new facilities could change the visual character of the immediate surrounding area. *These facilities, however, could be designed and landscaped so as to make the facility more compatible with the surrounding land uses.*
- Secondary impacts associated with the facilitation of population growth to the levels projected in the SCAG-78 forecast are addressed in the SCAG-78 Draft EIR. Similarly, mitigation measures for these potential impacts are presented in this document and in the Draft Air Quality Maintenance Plan.
- Construction costs for the 22-year period are roughly estimated at $1,429,000,000. Operation and maintenance costs are currently not available. Stated costs are estimated as gross costs over the period. Estimating net costs would require considerably more data than is currently available. These costs are broken down by county in Table IV-7. Federal and state grants may account for up to 75 percent and 12.5 percent of the total construction costs, respectively. Operation and maintenance costs, however, will be paid through user charges.

TABLE IV-7

CAPITAL COST ESTIMATES
FACILITY PLANNING PROJECTS
SOUTH COAST PLANNING AREA

County	Capital Cost (Planning, design and construction)
Los Angeles	$ 894,178,000
Orange	301,610,000
Riverside	94,851,000
San Bernardino	138,304,000
TOTAL	$1,428,943,000

Action 16: **Prepare the 1970-1980 Clean Water Grant Project Priority List to provide for funding of the municipal facilities in the South Coast Planning Area on a schedule consistent with the wastewater flow forecast shown in Table IV-6A and the dates indicated on Table IV-6B.**

The California State Water Resources Control Board (SWRCB) has been delegated authority to administer the Clean Water Grant Program. The purpose of this program is to assist municipalities in the financing of wastewater treatment works necessary to prevent water pollution, protecting and promoting the health safety and welfare of the inhabitants of the state. Specific guidelines have been drafted that regulate the manner in which these grants are to be issued. Allocation of funds is primarily based on a ranking of needs as established by each Regional Water Quality Control Board. Each priority list is submitted to the State Water Resources Control Board for development of a state priority list that serves as the basis for grant awards. Those municipal treatment works attaining the highest level on the priority list are shown in descending order in Table IV-8.

SCAG's proposed revision of the Clean Water Grant Priority List would give higher priority for capacity expansions to those facilities that have capacities that are being approached and are expected to be exceeded by 1985. In addition, the proposed revision to the priority list recommends that other facilities that have capacities that are expected to be met during the 1980-2000 period should be ranked accordingly to ensure that facilities are on line at the time capacities are reached. Environmental impacts that potentially would result from revising the priority list are identified below. No significant adverse impacts have been identified, and so, mitigation measures have not been addressed.

BENEFICIAL IMPACTS

- By emphasizing grant allocation in the manner proposed by SCAG, those projects receiving higher priority would be ones with near-term needs as defined by the SCAG-78 growth forecast. The majority of these grants would be allocated to currently developed areas or areas forecasted for near-term growth where treatment facility expansions are needed to maintain uniform effluent standards or to bring existing operations up to the uniform standards. Granting of funds to areas that are currently undeveloped and not forecasted for near-term growth would be a relatively low priority.
- Economies of scale may be experienced by emphasizing capacity expansion in developed areas. Grant allocation could, therefore, be more cost effective.

TABLE IV-8
HIGH LEVEL CLEAN WATER GRANT PRIORITIES

Priority Class	Description
Class A	Treatment works, including sewage collection systems, for which commitment to funding was made in a prior fiscal year
Class B	Critical treatment works, including (1) treatment works which provide needed treatment and disposal facilities for a sewered community not presently having treatment facilities and (2) treatment works, including sewage collection systems which eliminate documented and serious public health hazards in communities
Class C	Treatment works, excluding sewage collection systems, necessary to convert violations of currently applicable waste discharge requirement
Class D	Treatment works, excluding sewage collection systems, which provide waste treatment for existing communities that are presently unserviced

SOURCE: California State Water Resources Control Board, Division of Water Quality, Clean Water Grant Program Summary of Procedures, April 1976.

- Recommending that construction priorities be placed on those facilities that are in locations where capacities are being approached and are expected to be exceeded by 1985 would encourage urban in-filling. Fewer federal and state funds would be expended on the construction of wastewater treatment plants in undeveloped areas.

ADVERSE IMPACTS AND MITIGATION MEASURES

- New priority listings consistent with the needs shown in Table IV-6A could preempt allocation of funds to previously recognized high priorities. *Mitigation of this impact would be accomplished through disallowing the prempting high priority list classes A-D.*

Action 17: Revise NPDES permits to ensure that permitted wastewater flows are consistent with the flows shown in Table IV-6A for the time period of the permit.

As a result of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) all discharges into navigable waters require a permit from the state agency that administers the National Pollution Discharge Elimination System (NPDES) permitting process. In the case of California, the Regional Water Quality Control Boards have been delegated this responsibility.

In addition to permits that deal with effluent quality, the NPDES permitting process also regulates effluent flows. It is the intent of this action to provide consistency between these flow permits and the flows projected by SCAG in Table IV-6A for the time period of the permit. The potential environmental impacts of implementing this action follow.

BENEFICIAL IMPACTS

- This action would ensure that environmental impacts associated with a construction and operation of wastewater treatment plants in the South Coast Planning Area would not exceed those previously discussed in Action 15. Construction and expansion of plants would be limited to those identified in Table IV-6A.
- Revision of the permits would ensure that there is not an early commitment of ultimate treatment plant capacity.

ADVERSE IMPACTS AND MITIGATION MEASURES

- This action could potentially restrict growth in areas within the South Coast Planning Area where actual future population trends are not consistent with the population projections of the SCAG-78 forecast. *Such an impact could be partially mitigated by increased water conservation and also increased reuse of wastewater, or by revision of the SCAG-78 population forecast.*

WASTEWATER FACILITIES PLANNING AND AIR QUALITY MANAGEMENT COORDINATION

The draft 208 Plan recommends that the planning, design, and construction of municipal wastewater facilities should be consistent with the SCAG-78 forecast and, thus, with the Air Quality Management Plan (AQMP), since the AQMP is also based on SCAG-78. Consistency will be in terms of sizing of treatment facilities and the use of air quality control tactics of the AQMP as mitigation measures in municipal wastewater facility EIRs/EISs. Other actions recommended in the draft 208 Plan include (1) providing assistance of wastewater management agencies in implementing the air quality tactics specified in the AQMP as mitigation measures for their facility planning areas and (2) establishing construction grant (201) eligibility for such assistance.

Action 18: Plan, design and construct wastewater facilities consistent with air quality management plan.

Action 19: Assist in the implementation of the Air Quality Management Plan.

Action 20: In the preparation of Environmental Impact Reports and Statements (EIRs/EISs) for municipal wastewater facilities, specify as mitigation measures for air quality impacts those tactics and strategies adopted as part of the Air Quality Management Plan.

Federal law requires that an air quality standard not be exceeded more than once per year while state law does not permit even one violation. By any standard of measurement the South Coast Air Basin has not attained federal and state air quality standards for most air pollutants, particularly oxidants. Where trends do not indicate near attainment, long-term maintenance of these standards is unlikely without additional controls. The Air Quality Management Plan (AQMP), now under preparation by the South Coast Air Quality Management District, and SCAG will contain these needed measures, and set forth a time table for attainment of federal and state ambient air quality standards. If all standards are not met by 1987, federal funding for the region, including that for sewage treatment plants, could be withheld under certain conditions. In addition, funding of sewage treatment facilities may also be withheld if an approvable AQMP is not prepared on schedule (Ref. 1).

Because the 208 and AQMP programs have different objectives, it is important that they be consistent to assure integrated environmental management. Actions 18 and 19 are steps toward assuring overall consistency between the two programs.

The Environmental Protection Agency and the State Water Resources Control Board require determination of secondary air quality impacts and development of proposals to mitigate these impacts before granting approval and providing funding for wastewater treatment facility expansion. Action 20 specifies the inclusion of AQMP tactics in these mitigation measures. Table IV-9 lists those air quality tactics and strategies proposed by the Draft AQMP. Specific tactics would be selected on a case-by-case basis depending on the nature of the air quality problems encountered at each facility.

Impacts of specific AQMP tactics are not addressed in this document, since they are dealt with in detail in the AQMP draft EIR. That document is therefore incorporated into this assessment by reference. General impacts not dealt with in the AQMP EIR are listed below. Beneficial impacts would primarily include improved air quality and increased potential for attaining air quality standards. Adverse impacts would primarily involve increased economic costs and increased consumption of resources such as energy.

BENEFICIAL IMPACTS

- Consistency of programs would provide an increased potential for attainment of ambient air quality standards by 1987.
- Consistency would decrease the potential for loss of federal funding for wastewater facilities occurring if ambient air quality standards are not met by 1987 or if an approvable AQMP is not prepared on schedule.
- Beneficial impacts of AQMP tactics are identified in the draft AQMP DEIR.

TABLE IV-9
AQMP RECOMMENDED TACTICS

* Control Measure

HYDROCARBONS

H-1* Increased Air Passenger Load Factor
H-2* Jet Aircraft Ground Taxi Improvements
H-3* Triple Trailer Trucking
H-4* Modified Work Schedules
H-5* Parking Management, Carpool Preferential Parking
H-6* General Aviation Aircraft Engine Emission Controls
H-7* Emission Standard-New Off-Road Heavy Duty Non-Farm Equipment
H-8* Retrofit Off-Road Heavy Duty Non-Farm Equipment
H-9 Maintain Leaky Valves in Non-Refinery Industrial Processes
H-10* Tow Jet Aircraft
H-11 Electrify Railroad Switching Yards
H-12 Fuel Transfer at Airports
H-13* Trip Reduction Program
H-14* Wood Flatstock Cratings
H-15* Emission Standards - New Farm Equipment
H-16* Proposed 1978 Emission Standards - Jet Aircraft Engines
H-17* Retrofit Existing Gasoline Powered Farm Tractors
H-18* Annual Inspection and Maintenance of Light Duty Vehicles
H-19* Emission Controls for Small Relief Valves
H-20* Substitute Coatings Used in Metal Furniture and Fixture Manufacturing
H-21* Substitute Coatings Used In Fabrics and Paper Products Manufacturing
H-22* Emission Controls for Lawnmowers and Garden Equipment
H-23* Increased Bicycle/Pedestrian Facilities
H-24* Improved Emission Controls for Motor Vehicles
H-25 Reduce Jet Aircraft Queuing Delays
H-26* Substitute Coatings Used in Machinery Maintenance
H-27 Pedestrian Facilities (Combined with H-23)
H-28* Substitute Coatings Used in Ship Construction
H-29* Emission Controls on Gasoline Bulk Plant Operations
H-30* Fugitive Emission Controls of Randon Leaks of Refineries
H-31* Substitute Coatings Used in Magnetic Wire Manufacturing
H-32 Metal Product Coatings
H-33 Substitute Coatings Used in Machinery Manufacturing
H-34* Expanded Employer Carpool Program
H-35* Traffic Signal Synchronization
H-36* Voluntary Retirement of Older Cars
H-37* Substitute Coatings Used in Automobile Manufacturing
H-38 Reduce Auxiliary Power Units (APU) Usage for Jet Aircraft
H-39* Substitute Coatings Used in Metal Can and Coil Stock Manufacturing
H-40 Adhesive Manufacturing
H-41 Reduced Transit Fares
H-42* Emission Controls on Metal Cleaning Operations
H-43* Substitute Coatings Used in Printing Operations
H-44* Substitute Materials Used In Asphalt Applications (Cutback Asphalt)
H-45* Substitute Coatings Used In Wood Furniture Finishes
H-46* Emissions Controls on Chemical Manufacturing Plants
H-47* Emissions Controls: Paint Manufacturing Plants
H-48* Emission Controls: Rubber Products Manufacturing Plants
H-49* Substitute Coatings Used In Manufacturing Metal Parts and Products
H-50 Natural Gas and Oil Production
H-51 Ink Manufacturing
H-52 Substitute Coatings Used in Miscellaneous Industrial Manufacturing
H-53 Vegetable Oil Processing
H-54* Substitute Coatings Used in Automobile Refinishing
H-55 Emission Controls on Ship Lightering Operations
H-56* Oil Tank Cleaning
H-57* Emission Controls on Pharmaceutical Manufacturing Operations
H-58 Auto-Free Zones
H-59* Substitute Coatings Used in Basic Wood Furniture Manufacturing
H-60 Electric Vehicles
H-61 Solid Waste Handling
H-62* Marine Fuel Transfer Operations
H-63 Expanded Bus Service
H-64* Off-Road Motorcycle Emission Standards
H-65* Substitute Coatings Used in the Aerospace Industry
H-66 Tax Bunker Fuels
H-67 Parking Management: Increase Parking Surcharge
H-68 Peak Hour Congestion Pricing - Freeways
H-69 Automobile Operating Cost Increase (Gas Tax)
H-70 Parking Management: Reduced Parking Cost for Carpools
H-71 Increase Use of Rail, Air, and Bus for Inter-City Travel
H-72* Improved Trucking Efficiency
H-73 Increase Truck Trailer Piggy-Backing on Rail
H-74 Eliminate On-Street Parking: Select Arterials, Peak Hour
H-75 Motor Fuel Blended With Methanol and Ethanol
H-76 Paratransit
H-77 Expand Capacity and Improve Flow on Highway Network
H-78 Incorporate Non-Residential Uses Into Residential Areas
H-79 Employers Rideshare Program

H-80 Emissions Tax
H-81 18 Year Old Licenses
H-82 Home Goods Delivery
H-83 Coordinate Tanker Arrivals at Los Angeles/Long Beach Harbor
H-84 Pipeline Freight Transport
H-85* Freeway Facility Changes Supporting High Occupancy Vehicle Movement -- Freeway Transit and Exclusive High Occupancy Vehicle Lane for Carpools and Buses
H-86* Regional Core Mass Rapid Transit (MRT) - Wilshire Rail Line
H-87* Los Angeles Downtown People Mover System (DPM)
H-88* Congestion Relief - Freeway Widening
H-89* Transit System Improvements
H-90* Future Improvement of Technological Controls for Stationary Sources
H-91 Urban Infill and Orderly Urban Expansion
H-92 Locate Sensitive Receptors in Areas of Least Pollutant Exposure
H-93 Require an Integration of Land Uses in New Development and Major Development as a Condition of Approval

TABLE IV-9 (Continued)

H-94 Require Provision of Affordable Housing in New Development and Major Redevelopment as a Condition of Approval
H-95 Revise General Plans, Zoning Ordinances, and Subdivision Regulations to Provide Incentives to Non-Polluting and Low-Polluting Industries; Impose Performance Limits on Emissions in Industrially Zoned Areas
H-96 Improve Traffic Flow Through Use or One Way Streets and Intersection Modifications
H-97 Peak Period Truck Restrictions
H-98 Require City and County Purchasing Agents to Procure Low Pollutant combustion equipment and non-reactive solvents,Degreasers, Paint
H-99 Encourage Increased Densities in Areas Having Adequate Services and Located Within or Adjacent to Urban Areas
H-100 Prepare an Industrial and Commercial Revitalization Program
H-101 Encourage Rehabitilation of Older Urban Areas
H-102 Improve Bus Movement on Urban Streets
H-103 Improve Access To and Within Major Airports
H-104 Develop Design Standards for New Parking Facilities
H-105 Evaluate Methods of Solid Waste Conversion
H-106 Growth Management (City of Los Angeles)
H-107 Restrictions on Truck Delivery During Peak Hours
H-108 Parking Management Plan (City of Los Angeles)
H-109 Increase Bus Benches and Bus Shelters
H-110 Use of Trees and Landscaping to Improve Air Quality
H-111 Develop Landfill Disposal Sites to Discourage Individual Trips to Landfill
H-112 Carpools Sign-Ups for New City and County Employees
H-113 New County and City Cars Purchased for Low Emission and High Fuel Economy Standards
H-114 Subject City and County Vehicles to a Regular Program of Inspection and Maintenance
H-115 Solid Waste Landfill Siting

OXIDES OF NITROGEN

N-1 * Energy Conservation; Commercial Institution & Industrial Audits
N-2 * Energy Conservation Residential Retrofit
N-3 Energy Conservation; Solar Water Heater Retrofit-Electric
N-4 Energy Conservation Street Lighting
N-5 * Alter Design of New Residential Space Heaters
N-6 * Alter Design of New Residential Water Heaters
N-7 * Emission Controls on Cement Kilns
N-8 * Emission Controls on Medium & Small Steach Generators
N-9 * Emission Controls on Gas Turbines
N-10 * Emission Controls on Industrial Boilers
N-11 * Emission Controls on Refinery Heaters
N-12 Retardation of Fuel Injection Timing for Railroad Diesel Engines
N-13 * Retardation of Fuel Injection Timing for Marine Diesel Engines
N-14 * Emission Controls on Glass Melting Furnaces
N-15 Energy Conservation, Solar Water Heater (New Residences)
N-16 * Emission Controls on Stationary Internal Combustion Engines
N-17 Energy Conservation, Marginal Cost Program
N-18 Energy Conservation: Street Design
N-19 Require Strict Energy Conservation in All Government Buildings
N-20 Solar Energy Incentive
N-21 Life-Cycle Costing

PARTICULATES

P-1 Decrease Salt Spray from Cooling Towers
P-2 Asphalt Unpaved Roads to Reduce Fugitive Dust
P-3* Filter Dust from Pharmaceutical Manufacturing Processes
P-4 * Filter Dust from Rubber Products Manufacturing Processes
P-5 Filter Dust from Paint Manufacturing Processes
P-6 Filter Dust from Woodworking Industries
P-7 Emission Controls on Solid Waste Processes
P-8 Filter Collection of Fine Particulates
P-9 * Control Dust Emissions From Construction and Demolition Projects

SULFUR DIOXIDE

S-1 * Petroleum Coke Calcining, 80% Reduction
S-2 Iron Ore Sintering Operations, 70% Reduction
S-3 * Fluid Catalytic Cracking, 70% Reduction
S-4 * Refinery Fuel Burning Sources
S-5 * Sulfur Content of Diesel Fuel
S-6 * Electric Power Generating, Equipment, 60% Reduction
S-7 Iron Ore Sintering Operations, 90% Reduction
S-8 Fluid Catalytic Cracking, 90% Reduction
S-9 Petroleum Coke Calcining, 90% Reduction
S-10 Electric Power Generation, 88% Reduction
S-11 Fuel Burning Requirements

NONTECHNOLOGICAL

T-1 New Source Offset Program - Revision #1
T-2 New Source Offset Program - Revision #2
T-3 Seasonal Industrial Curtailment
T-4 Permits Conditioned Upon Location
T-5 Permits Conditioned Upon Time of Day of Emissions
T-6 Permits Conditioned Upon Meteorological Forecasts
T-7 Indirect Source Controls
T-8 Indirect Source Review for Federal Facilities
T-9 Best Available Control Technology (BACT) for All Sources
T-10 Vehicle Repair as an Emissions Offset
T-11 Inclusion of Air Quality Considerations in the General Plan

TABLE IV-9 (Continued)

#	Control Measure
T-12	Air Quality Planning Review Process
T-13	Local Government Review and Comment on South Coast Air Quality Management District (SCAQMD) Rules and Regulations (Orange County)
T-14	Revise SCAQMD Rule 213 to Require 1 for 1 Offset of New Source Emissions in the Prevailing Downwind Proximity of the New Source
T-15	Include Checks for SCAQMD Permits as Part of Routine Fire Marshall Inspections
T-16	Local Government Controls on Unregulated Stationary Sources
T-17	Review Local Taxing Structure to Promote a "Cleaner" Industrial Base

* These control measures are recommended in the Draft AQMP.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Funds required to implement these actions could divert facilities planning funds from other purposes.
- Adverse impacts and mitigation measures of AQMP tactics are identified in the draft AQMP DEIR.

UNSEWERED AREAS

One of the major unsewered developing areas in Los Angeles County is the Malibu-Topanga area. Currently, the estimated population of the coastal Malibu and Topanga area is 26,000 persons, with an estimated 9,600 housing units as of January 1977. Sewering in this area would be extremely expensive and, in many areas, unlikely to be cost effective due to the dispersed nature of the development. Moreover, all efforts in the past to provide any sewerage project in this area have been highly controversial and all community-wide projects have been abandoned (Ref. 5).

Nonetheless, the area continues to develop, and the need for a waste management plan increases. In response to these needs, a waste management plan for this area has been developed by the Los Angeles County Engineer for the draft 208 Plan. The Malibu/Topanga Waste Management program recommends the planning, design, and construction of small package treatment plants for beachfront Malibu and part of the Malibu civic center where conditions are unfavorable for continued reliance on septic tanks. The program also recommends creating several On-Site Wastewater Management Zones (pursuant to Senate Bill 430) within the remainder of the Malibu/Topanga area; septic tank management approaches to prevent environmental problems are to be developed within these zones. Finally, the program calls for the revision of the Fiscal Year 1978-1979 Clean Water Grant Project Priority List to provide grant funds for the program.

Action 21: **Plan, design, and construct package treatment plants for beachfront Malibu and part of the Malibu civic center area.**

In those beachfront and civic center areas of Malibu where septic tanks show a very high rate of failure and relatively short service lives, or where the continued use of septic systems threatens to degrade water quality, it is proposed that several small community wastewater collection and treatment systems be constructed. These community systems would utilize conventional or pressure sewers to collect the contents of individual septic tanks and pump them to one of three plants for treatment. After processing at the treatment plant, effluent would be discharged to the ocean through a 15,000-foot outfall. It is assumed that the impacts from constructing small community sewers would be similar in nature to those of constructing the much larger municipal plants, differing only in the degree of impact. The reader is, therefore, referred to the action concerning construction of municipal treatment plants (Action 15) for a description of the potential primary and secondary impacts of community treatment plant construction. The ocean disposal impacts identified in the municipal treatment plant action should also be considered since, as presently planned, the community plants will also discharge their effluent to the ocean. Specific impacts concerning construction of small sewer systems and package treatment plants are identified below. (It should be noted that a project EIR will be required for this project to analyze environmental impacts in detail).

BENEFICIAL IMPACTS

- Water quality problems that currently exist in nearshore areas would be improved by the construction of community treatment plants. Construction of these plants would allow the prohibition of operating septic tanks in those areas that are not properly located behind seawalls.

- Mitigation of water quality problems in nearshore areas would decrease the potential health risk to those members of the public who utilize these areas for recreational purposes. Similarly, the public nuisance associated with discharges on the beach would be removed.
- Community sewer systems serving the civic center area could potentially reduce the existing coliform count in Malibu Creek. The water quality data in this area, however, is incomplete, and it is impossible to determine what relationship, if any, exists between the recorded high densities of coliform and septic tank systems in the area.
- In lower portions of the civic center area, high ground water conditions may have in the past affected septic tank performance and resulted in ground water contamination (Ref. 5). Construction of community treatment plants would reduce the potential for such contamination.
- The use of community treatment plants would increase the potential for wastewater reuse.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Utilization of pressurized sewage collection systems represents a potentially significant health hazard (as compared to gravity flow) if the pipeline should leak or break.
- Construction of the treatment plants north of the Pacific Coast Highway (location is at this time unknown) could result in the disturbance of the existing oak woodland. *This impact could be mitigated by careful site selection.*
- Construction of treatment plants could increase fire hazards, particularly if work were to take place during a summer following a dry winter. *This hazard can be partially mitigated with the use of appropriate equipment modification, e. g., spark arresters.*
- Treatment plants could conflict with surrounding land use, thereby diminishing the visual character of the area.
- Cost of this action is estimated to be approximately $7,240,000. This estimate does not include treatment site acquisition costs, nor on-site pump installation costs. This latter cost is estimated to vary from $1,000 to $3,000 per house depending upon the nature and needs of the specific property. For large volume connections (e.g., large apartment complexes and restaurants), the on-site costs may be substantially more. Table IV-10 presents a cost breakdown for both the beachfront and civic center areas (Ref. 5). The majority of these costs may be borne by the federal government through the Clean Water Grant Program. Much of the work proposed in this action would qualify as alternative technologies and so be eligible for 85 percent federal government funding under the recent amendments to PL 92-500. The state government would finance a maximum of 12.5 percent of the total construction costs. Local governments would have to finance the local share of construction costs either at a minimum of 12.5 percent (assuming no new technology funding) or a minimum of 2.5 percent (assuming new technology funding) of total costs (Ref. 5).

Action 22: Create On-site Wastewater-Management Zones in the Malibu/Topanga Area pursuant to the Behr Bill. (SB 430)

Action 23: Develop and implement septic-tank management approaches for each on-site waste management zone.

On-site Wastewater Management Zones (OSWMZ), as proposed, are to be created by the Board of Supervisors to ensure the proper maintenance and operation of privately owned septic systems. The OSWMZ would have the authority to go onto private premises to inspect systems, to monitor

TABLE IV-10
COMMUNITY SEWER COST SUMMARY

Activity	Beachfront
Planning	$ 80,000
Design	200,000
Construction (Total)	
Wastewater-treatment plants — 3 plants x $1,600,000	4,800,000
Ocean outfall discharge 15,000-foot length, each — 3 outfall lines x $500,000	1,500,000
Pressure sewer collection system, including valves and appurtenances — 47,000 ft. x $14/ft.	660,000
TOTAL	$7,240,000

SOURCE: Waste Treatment Management for the Malibu/ Topanga Area, Civil Engineering Division, County of Los Angeles, June 1978.

septic tank performance, to adopt and enforce regulations regarding maintenance, operation, and construction, and to recover costs for abatement through liens on property. OSWMZ may provide pumping for normal home systems once every two years. Regulations concerning construction (e.g., access uses, stand pipes) would likely be tied to issuance of various building permits.

OSWMZ have been proposed for beachfront properties, civic center-Serra Road, Monte Nido, Coastal hillside, inland of Pacific Coast Highway, Point Dume Headlands, Zuma Canyon, and Topanga-Fernwood. The environmental impacts of creating these OSWMZ are discussed below, together with the impacts of implementing septic tank management approaches for each OSWMZ. The impacts of these actions are discussed jointly since they are closely related, and would probably not be implemented separately.

BENEFICIAL IMPACTS

- OSWMZ would require that private septic systems be periodically pumped, as opposed to present practices where pumping occurs only when tanks are full. Such practices will ensure periodic inspection of the systems, which could lead to rectification of problems before septic-tank failure.
- Construction of new septic systems would be closely regulated to ensure maximum operating efficiency.
- Improved septic tank management would reduce the potential for tank failure, thereby reducing the potential for effluent contamination of marine, surface, and ground waters.
- A reducted potential for marine and surface water contamination will result in a reduced public-health risk.
- Local air quality could improve as a result of fewer incidences of septic tank failure and their associated odors.
- Studies by the OSWMZ would provide the detailed information needed to substantiate the need and feasibility of alternatives to septic tank waste treatment.
- The documentation records that would be accumulated by the OSWMZ would provide prospective property buyers with information on the condition of the property's septic tank.
- Increased frequency of septic tank pumping would stimulate the local septic tank pumping industry.

ADVERSE IMPACTS AND MITIGATION MEASURES

- More frequent pumping of septic tanks would result in increased quantities of septage (septic tank sludge) requiring disposal and/or reuse.
- Trucking of septage to the disposal or treatment area would result in an emission of air pollutants. *Mitigation of this impact could be accomplished by the construction of a septic pumping facility, which would pump septage to the Tapia treatment plant. Construction and operation of this facility would also result in some level of air pollutant emissions. These emissions, however, would normally be less significant than trucking. Costs of facility construction are estimated at $455,000.*
- More frequent septic tank pumping would result in periodic increases in ambient noise levels. *This impact could be mitigated if pumping equipment were equipped with proper mufflers.*

- More frequent septic tank pumping would result in increased costs to the property owner. OSWMZ could recover the cost of abating nuisances through liens on properties.
- Unearthing septic tanks that have been covered over by home improvements (e.g., patios) may represent significant inconveniences and costs to property owners.
- Existing land use patterns could be modified in response to limits imposed on septic systems. Some properties with unsuitable soils and geology for septic tank leach-field systems may have less development potential.
- Increased governmental regulation of traditionally private affairs could potentially increase public resentment. *Local governments should carefully evaluate the benefits that can be achieved with each contemplated increase in government activity. Informational materials should be prepared for distribution to homeowners, explaining the need for the action and the specific intent, providing cost benefit information and soliciting cooperation and suggestions.*
- Cost of this planning action is estimated at a total of $69,000. Table IV-11 presents a cost summary of this proposed action. Grant funds to help carry out the initial feasibility studies for the OSWMZ are available through the Clean Water Grant Program. If the program is approved for grant assistance, the current federal grant subsidy will be 75 percent of the eligible cost of the study. A 12.5 percent state grant may also be available for such studies. The future activities of the OSWMZ may be funded with an assessment on properties in the zone levied by the Board of Supervisors. Such an assessment would result in an increased tax burden on taxpayers. Estimates of the amount of this burden are currently unavailable.

Action 24: Revise the Fiscal Year 1978-1979 Clean Water Grant Project priority listing for the Malibu area wastewater facilities.

The project for Malibu area wastewater facilities on the Clean Water Grant priority list has not received construction funding, and local bond issues for providing funds have been defeated. This action proposes a revision of the project description. This action entails no direct impacts.

TABLE IV-11
OSWMZ PROGRAM COST SUMMARY

Area	Planning
Beach Front	$(80,000)[a]
Civic Center	15,000
Monte Nido	10,000
Coastal Hillsides, Inland PCH	2,000
Point Dume	15,000
Zuma Canyon	2,000
Topanga/Fernwood	15,000
Septage Pumping Facility (to Tapia WRP)	10,000
TOTAL	$ 69,000

SOURCE: Plan element report 2.2B, Waste Treatment Management for the Malibu/Topanga Area, Civil Engineering Division, County of Los Angeles, June 1978.

[a] Costs are covered under the previous action.

UNAVOIDABLE ADVERSE IMPACTS

Implementation of Municipal and Industrial Waste Management Programs as proposed in the draft 208 Plan would result in a number of adverse environmental impacts. Of the mitigation measures proposed to reduce the severity of these adverse impacts, most cannot be assumed to be completely implementable, enforceable, and/or effective. Given this premise, most of the adverse impacts discussed above are considered unavoidable. Their magnitude and significance would vary, however, depending on the relative value placed on them by the general public, private interests, and regulatory agencies.

Total cost for constructing the waste treatment plants is estimated to be roughly $1,429,000,000. These costs, plus those associated with operating the facilities, would require public investment. Amortization of the construction costs over a 22-year period would represent assessments on current users who might not benefit from increased future capacity.

Total costs for construction of package treatment plants in the Malibu area is estimated to be $7,240,000, which would require public investment. Some property owners may incur additional costs for unearthing inaccessible septic tanks. If implemented, the cost for the pumping facility to pump septage to the Tapia treatment plant is estimated to be $455,000.

Estimated costs and other unavoidable adverse impacts are summarized in Table IV-12.

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Although water quality would be improved, implementation of the Municipal and Industrial Waste Management element of the draft 208 Plan could adversely affect some other future beneficial uses of the environment.

Diverting public funds for implementation of the programs could delay funding for other beneficial projects. Some property owners in the Malibu area may also incur costs for unearthing septic tanks.

Biotic communities would be impaired or lost if new treatment plants were located in natural areas, particularly in the vicinity of Malibu. The siting of the treatment plants could also conflict with adjacent land uses and reduce long-term visual quality. Some localized air emission and problems with odors and noise could also occur during operation of the treatment plants, reducing the desirability of some areas. Some locations in Malibu may also become less suitable for development as a result of stricter septic tank siting regulations.

Utilization of natural resources, including energy, during the construction and operation of municipal wastewater treatment plants would preclude some other beneficial use of these resources.

Depending on the pending recommendations for the long-range wastewater solids management plan, the disposition of sludge and septic tank residues in areas other than existing landfills would preclude other uses of the selected site(s) during the life of the operation. If and when such operations were discontinued other uses could occur, although they would probably be limited in type.

IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES

There would be relatively few irreversible environmental changes and/or commitments of resources with implementation of the Municipal and Industrial Waste Management element of the draft 208 Plan. Those that are expected to occur would be principally associated with construction and operation of the treatment plants.

TABLE IV-12

MUNICIPAL AND INDUSTRIAL WASTE MANAGEMENT
SUMMARY UNAVOIDABLE ADVERSE IMPACTS

Adverse Potential Unavoidable Impacts[a]	Recommended Actions									
	15	16	17	18	19	20	21	22	23	24
Increased effluent discharges to the marine environment resulting in increased turbidity, changes in water temperature, and potential alteration of benthic habitat	X									
Increased concentration of fertilizer salts and heavy metals, and reduced organic nutrients with secondary treatment of wastewater	X									
Increased sewage sludge volumes with secondary treatment of wastewater	X									
Increased pumping of septage in the Malibu area requiring disposal and/or reuse								X	X	
Tertiary treatment required upon attainment of continuous flows in Reach 4 of the Santa Ana River	X									
Potential seasonal algae blooms and attendant odor problems in aquatic environments	X									
Consumption of natural resources and energy during treatment plant operations	X						X			
Potential loss of wildlife habitats in siting treatment plants	X						X			
Localized odor and/or air quality problems during treatment plant operations	X							X	X	
Reduced suitability for development in some areas of Malibu resulting from stricter septic tank siting regulations								X	X	
Potential changes in visual character/incompatibility of treatment plants with surrounding areas	X						X			
Periodic increases in noise during pumping of septic tanks in the Malibu area								X	X	
Significant inconvenience to homeowners during unearthing of septic tanks in the Malibu area								X	X	
Potential for increased public resentment of governmental regulations in the Malibu area								X	X	
Potential increase in fire hazards during construction and operation of treatment plants							X			
Potential health hazard with accidental leaks or breaks in high pressure septic sewage collection system in the Malibu area							X			
Localized increases in dust, noise, traffic problems, and erosion/sedimentation; and consumption of electricity, gas, and diesel fuel during construction of treatment plants	X						X			
Municipal treatment plant construction costs – $1,429,000,000	X									
Community treatment plant construction costs – $7,240,000							X			
Tapia pumping plant construction costs – $465,000							X			

No direct impacts

[a] Since the recommended mitigation measures cannot be assumed to be totally implementable, enforceable, and/or effective, most of the adverse impacts were considered to be unavoidable. The significance of these adverse impacts, however, would be variable.

Natural resources, including fuels consumed during construction of the plants, would be irreversibly lost for other purposes. During operation, however, the treatment plants could create some savings in energy through the production of methane gas from digesters. Wildlife habitats could be destroyed, depending on the specific locations selected for the wastewater treatment plants.

Funds expended for implementing the various actions, particularly for construction and operation of the treatment plants, would be an irretrievable commitment of public financial resources.

GROWTH-INDUCING IMPACTS

Population growth in the South Coast Planning Area is supported by an infrastructure of various utilities, one of which is wastewater treatment facilities. The incremental capacity expansion of this utility has played a key role in the area's urban development, and especially in the development of its dispersed urban form.

Recognizing the need for long-term planning and the orderly development of support facilities, the 208 Plan specifies treatment plant capacities that are consistent with the SCAG growth projections for the year 2000. Assuming this growth projection as a given condition, the draft 208 Plan would not be considered growth-inducing.

According to the legal definition in the California Environmental Quality Act, however, projects that have growth-inducing potential include those that "would remove obstacles to population growth." Inadequate wastewater treatment facilities are considered such an obstacle. Sizing treatment plant capacities to the growth projections effectively removes this obstacle. Thus, by definition, the draft 208 Plan facilitates growth to the level projected for the year 2000. The potential secondary environmental impacts of this growth have been addressed in detail in the Environmental Impact Report of the SCAG-78 Growth Forecast. Mitigation measures for potential increases in air pollutant emissions are similarly addressed in the South Coast Air Basins Air Quality Management Plan. These EIRs are therefore incorporated by reference into this document.

The development of community treatment plants and septic tank management approaches in the Malibu area, on the other hand, would not be considered growth-inducing. The community treatment plant facilities are planned in response to a particular set of long-standing waste-management problems. The new facilities are designed to replace the old, ineffective septic tank systems rather than increase capacity.

EFFECTS FOUND NOT TO BE SIGNIFICANT

All environmental effects identified in the preparation of this document are included, regardless of their degree of significance. In many cases, because of the level of specificity of the plan, it has not been possible to determine accurately the relative significance or insignificance of an impact. In other cases, impacts have been identified as being relatively insignificant. In no case, however, are any impacts omitted because of their lack of significance.

REFERENCES

1. Southern California Association of Governments. *208-21 Milestone Report,* November 1977.

2. California Environmental Quality Act of 1970, Title 14, Division 6 California Administrative Code.

3. National Environmental Policy Act of 1969, P. L. 91-190, 42 U.S.C.

4. South Coast Air Quality Management District. *Draft Air Quality Management Plan,* August 1978.

5. Los Angeles, County of, Department of County Engineer-Facilities *Task 2-10 Waste Treatment Management for the Malibu/Topanga Area*, June 1978.

CHAPTER 3 – WATER CONSERVATION AND REUSE

CHAPTER 3
Water Conservation and Reuse

Increased water conservation and reuse in the South Coast Planning Area would have several beneficial effects. These effects would include (1) a net economic benefit to the region, (2) reduced net energy requirements, (3) reduced need for dams, reservoirs, and aqueducts supplying imported water, and (4) provide water quality benefits in the Delta region and other watersheds outside the South Coast Planning Area. Increased conservation and reuse will also have specific effects on surface, ground, and coastal waters within the South Coast Planning Area.

The water conservation and reuse element of the draft 208 Plan addresses three main areas of water conservation and reuse: (1) stormwater conservation, (2) consumer water conservation, and (3) wastewater reclamation and reuse. Actions are recommended for two of these sections, excluding consumer water conservation. Therefore, the consumer water conservation section has been deleted from the assessment.

STORMWATER CONSERVATION

One action is currently recommended in the draft 208 Plan for the conservation of stormwaters. The environmental implications of this action are discussed below.

Action 25: **Maintain current stormwater conservation programs.**

No impacts would result from this action, since no changes from existing practices are involved.

WASTEWATER RECLAMATION AND REUSE

The draft 208 Plan recommends development of an implementation strategy to increase wastewater reuse in Los Angeles and Orange Counties. In addition, it is also recommended that the 208 Plan's water conservation and reuse policies be adopted as the policy framework for the Los Angeles/Orange Counties reuse study. The environmental impacts of these two actions are addressed below.

Action 26: **Develop a long-range plan and implementation strategy to increase wastewater reuse in Los Angeles and Orange Counties through the Los Angeles/Orange Counties regional reuse study.**

No impacts would occur from this action, as written, since specific provisions for implementation are not included.

Action 27: Adopt the 208 Plan water-conservation and reuse policies as the policy framework for the Los Angeles/Orange County Reuse Study.

No impacts will occur from this action, since it will influence only the preparation of a study.

CHAPTER 4 – RESIDUAL WASTE MANAGEMENT PLAN

CHAPTER 4
Residual Waste Management Plan

The residual waste management plan element presents a recommended policy and action plan for two residual waste categories: (1) wastewater sludge management, and (2) solid and non-sewerable liquid waste management. The objectives of these recommendations is to ensure that water quality protection is considered in all residual waste management activities, including planning and operations.

WASTEWATER SLUDGE MANAGEMENT

The draft 208 Plan recommends development and implementation of a long-range wastewater solids management plan for the processing, reuse, and/or land disposal of sludge generated in the Los Angeles and Orange County metropolitan portion of the South Coast Planning Area.

Action 28: **Develop a long-range wastewater sludge management plan and implementation strategy for the Los Angeles/Orange County Metropolitan Area (LA/OMA Project).**

The LA/OMA Project is currently developing a Regional Wastewater Solids Management Plan, which is scheduled for completion in 1979. Inherent in the approach taken by the LA/OMA Project is the development of a plan that is environmentally, socially, and economically acceptable. Significant adverse impacts will either be avoided and/or mitigated whenever possible. Specific impacts associated with implementation of the plan will be addressed in the LA/OMA Project Report/EIR/EIS.

OTHER SOLID AND NON-SEWERABLE LIQUID WASTES

Currently, three actions are being recommended in the solid and non-sewerable liquid waste section of the draft 208 Plan. These actions include the development and implementation of a strategy for permanently closing the Stringfellow Class I hazardous waste disposal site in Riverside County, discouraging the granting of waste disposal permit exemptions by local solid waste enforcement agencies, and requiring ground water quality monitoring and other monitoring program improvements at Class III sanitary landfills. The latter two actions are discussed jointly since their effects on the environment are the same.

Action 29: **Develop and implement a strategy for permanently closing the Stringfellow Class I hazardous waste disposal site.**

The Stringfellow Class I disposal site located in the Jurupa Mountains north of Glen Avon in Riverside County began operations as a toxic industrial waste disposal dump in 1957. In 1972, after

fifteen years of operation and the disposition of approximately 32 million gallons of hazardous wastes, disposal operations at the Stringfellow site were suspended due to significant levels of ground water contamination (Ref. 1).

Since the cessation of operations in 1972 the site has been maintained by intercepting surface wastewater leaking from the disposal area and pumping these wastewaters from a collection pump back into the disposal area for evaporation. The discharged wastewater is made up of spent acids and caustics with significant amounts of sulfuric, nitric, and hydrochloric acid, although its exact chemical composition is unknown. In addition, some wastewater contains toxic inorganic chemical compounds of zinc, lead, mercury, and chromium (Ref. 1).

The proposal to close the site permanently, if implemented, would include either altering the integrity of the site so that potential pollutants would be adequately contained within the disposal site or totally removing the potential pollutants to another Class I site.

The potential environmental impacts that would be associated with the closure of the site would be similar for each method of closure under consideration. There would, however, be some differences in the degree to which the impacts would occur, including the long-term effectiveness of the closure operation selected. Since the method of closure is at this time uncertain, the impacts identified below represent general consequences that could be expected to occur from permanent closure of the site.

BENEFICIAL IMPACTS

- Serious contamination of ground water supplies in the Glen Avon region caused by the continued seepage of toxic wastewaters would be significantly reduced, if not totally abated.
- Contamination of surface waters resulting from inundation of the liquid waste ponds by heavy stormwater runoff would be avoided.
- Air quality impacts associated with spray evaporation would be eliminated.
- Aquatic biota in downstream receiving waters would benefit from reduced pollutant loads.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Increased demand on out-of-county Class I hazardous disposal sites would occur, since a portion of the contaminated soil from the Stringfellow site would require relocation under any of the closure options. Long-term demands on these out-of-county Class I sites, however, would not be increased, since wastes currently being generated in the county are exported as a result of the 1972 closure of the Stringfellow site. *Selection of the closure option that minimizes the volume of waste requiring relocation would partially mitigate this impact.*
- Cost of closing the site would be significant. Depending on which method of closure is selected, capital costs could vary between $190,000 for minimal improvements to $3,835,000 for complete removal of the pollutant source. The cost of closure should be considered in the light of the external costs that are associated with surface and ground water contamination, which would continue if problems with the site are not properly corrected.
- If state funding for site closure is denied and the municipal agency assumes financial responsibility for closure in return for a lien on the property the agency might also be liable for any future long-term contamination problems that would require mitigation.

Action 30: Suspend the granting of waste-disposal permit exemptions by local solid waste enforcement agencies for Class III landfills.

Action 31: Require ground water quality monitoring and other monitoring program improvements at Class III sanitary landfills.

The California Administrative Code provides that local solid waste enforcement agencies may exempt Class III landfills from the solid waste permits required for Class I and II landfills. Granting these exemptions can result in decreased inspection and monitoring at these sites, which might, in turn, result in ground water quality impairment by providing opportunities for deposition of Group I or II materials. Such dumping occurs now at Class III sites in undetermined amounts despite the existing inspection programs, and the practice could be expected to increase at sites inspected less frequently. In addition, Class III landfills are often located in areas of usable ground water (Refs. 2, 3, 4, and 5). Requiring ground water quality monitoring at Class III landfills, which is not presently required, would allow for early detection and mitigation of ground water contamination resulting from water-disposal operations. Improvements to monitoring programs would allow for detection of Group I or II wastes in mixed loads prior to disposal.

BENEFICIAL IMPACTS

- Suspending the granting of waste disposal permit exemptions would reduce the potential for contaminating ground water supplies in proximity to Class III landfills.
- The potential for public health and safety hazards resulting from the improper disposal of hazardous substances would be reduced if exemptions were denied.
- Hazards to the health and safety of workers at landfill sites, which result from the often unknown presence of illegally deposited Group I or II substances, would be decreased with suspension of exemptions.
- Early detection of ground water contamination could allow for abatement of pollution prior to rendering ground water supplies unusable.

ADVERSE IMPACTS AND MITIGATION MEASURES

- More illegal dumping of hazardous or polluting substances might occur outside of landfills if procedures are made more restrictive at Class III sites. *Possible mitigation measures would include (1) increasing the penalties for illegal dumping, and (2) attempting to achieve greater cooperation from the public and from business by providing information about the need for strict regulation of dumping and the possible hazards involved in illegal dumping.*
- Increased administrative and inspection costs would increase dumping costs. These costs would ultimately be assumed by the consumers. *Increased fines for illegal dumping could offset the costs of additional inspections, and also decrease the number of additional inspections needed. This procedure would directly assess increased costs to those responsible for them.*

UNAVOIDABLE ADVERSE IMPACTS

Development and implementation of measures for Residual Waste Management as proposed in the draft 208 Plan would result in a number of adverse environmental impacts. Of the mitigation measures proposed to reduce the severity of these adverse impacts, most cannot be assumed to be completely implementable, enforceable and/or effective. Given this premise, most of the adverse impacts discussed above are considered unavoidable. Their magnitude and significance would vary, depending on the relative value placed on them by the general public, private interests, and regulatory agencies.

Depending on the option selected, total costs for closure of the Stringfellow Class I disposal site would range between $190,000 to $3,835,000, which would require public investment. Increased dumping costs at other facilities would be transferred to users.

Estimated costs and other unavoidable advance impacts are summarized in Table IV-13.

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Although water quality would be improved, implementation of the Residual Waste Management Plan could adversely affect some other future beneficial uses of the environment.

Diverting public funds for closure of the Stringfellow Class I hazardous waste disposal site could delay funding of other significant programs.

Increased demand on Class I landfill capacity that would result from excavation and disposition of portions of the Stringfellow site's contaminated soil would slightly reduce the long-term productivity of existing landfill capacity. These impacts would vary depending on which closure options were selected. The potential decrease of landfill productivity and benefical use is expected to be minimal given the quantities of wastes to be disposed and the amount of existing landfill capacity.

The long-term significance of potential illegal dumping of hazardous materials through suspension of exemptions for Class III sites would depend on its magnitude and location.

IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES

The only irreversible commitment of resources or irreversible environmental changes resulting from implementation of the Residual Waste Management Plan would be the loss of a small amount of existing Class I landfill capacity. Closure of the Stringfellow site would require disposition of portions of the site's contaminated soils in an out of county Class I landfill site.

GROWTH-INDUCING IMPACTS

Development and implementation of actions proposed in the Residual Waste Management Plan would not remove obstacles to growth or otherwise enhance the opportunity or desirability for growth.

EFFECTS FOUND NOT TO BE SIGNIFICANT

All environmental effects identified in the preparation of this document are included, regardless of their degree of significance. In many cases, because of the level of specificity of the plan, it has not been possible to determine accurately the relative significance or insignificance of an impact. In other cases, impacts have been identified as being relatively insignificant. In no case, however, are any impacts omitted because of their lack of significance.

TABLE IV-13

RESIDUAL WASTE MANAGEMENT PLAN
SUMMARY UNAVOIDABLE ADVERSE IMPACTS

Potential Unavoidable Adverse Impacts[a]	Recommended Action			
	28	29	30	31
Relocation of wastes from the Stringfellow site to another Class I landfill required		X		
Increased potential for illegal dumping of hazardous wastes with stricter Class III regulations			X	X
Increased administration, inspection, and dumping costs with suspending Class III permit exemptions			X	X
Estimated costs ranging between $190,000 and $3,835,000, depending on method selected to close the Stringfellow site		X		

[a] Since the recommended mitigation measures cannot be assumed to be totally implementable, enforceable, and/or effective, most of the adverse impacts were considered to be unavoidable. The significance of these adverse impacts, however, would vary.

REFERENCES

1. James M. Montgomery, Inc. *Engineering Study of Stringfellow Class I Disposal Site,* January 1977.

2. Engineering-Science Inc. *Task 2-8 Subregional Development of Residual Waste Control and Land Disposal Needs, County of Orange,* March 1978.

3. San Bernardino County Environmental Health Services Department. *Task 2-8 Subregional Development of Residual Waste Control and Land Disposal Needs, San Bernardino County,* June 1978.

4. Sanitation Division, Los Angeles County Engineer. *Task 2-8 Subregional Development of Residual Waste Control and Land Disposal Needs, Los Angeles County,* March 1978.

CHAPTER 5 – INTEGRATED CONTROL PLANS – PRIORITY PROGRAM FOR NEWPORT BAY

CHAPTER 5

Integrated Control Plans — Priority Program for Newport Bay

Newport Bay is one of the few remaining large estuaries along the Southern California coastline. It consists of two portions: the Lower Bay, which is a lagoon that has been modified substantially and developed into a residential/recreational marina, and the Upper Bay, which has received less modification and has been converted into a state ecological reserve.

Upper Newport Bay's environmental stresses have consisted of salt evaporation ponds, extensive sedimentation, and human activities around shorelines and islands. The salt evaporation ponds were constructed and used between 1934 and 1969; they operated by entrapping water in artificially created basins and allowing dissolved salt to concentrate. The lowermost dike is approximately nine feet in elevation and is rarely reached by the highest tides. Storms and runoff have modified this system, layering the basins with sediment and impeding natural marsh development in the Upper Bay.

Sediment that is carried beyond the salt evaporation ponds is deposited in both Upper and Lower Newport Bay. This condition is especially pronounced during normal storm events, and it has temporary effects on the Bay's aquatic biota. Because of the bay's twice-a-day tidal movement a small quantity of the introduced fine sediments are transported to the ocean. The flushing process is one that has functioned efficiently for centuries in coastal environments. Man's activities in the Newport Bay watershed, however, have accelerated erosion while significantly restructing the bay's ability to transfer eroded material to the sea. As a result, increases in sediment build-up in the bay have become a significant problem.

The conservation actions recommended by SCAG in the draft 208 Plan are intended to protect Newport Bay and to restore its upper portions to a unique marshland community. This plan represents the first time that a comprehensive program has been developed to restore and protect a Southern California coastal wetland involving both state and local agencies.

The topical sections addressed in the draft 208 Plan include habitat restoration, sedimentation and erosion controls, surface sanitation, vessel waste management, and integrated water quality evaluation and control criteria. For each topical section several more specific actions have been proposed. These actions are assessed in the following section for their potential environmental impacts.

HABITAT RESTORATION

Concern for the ecological habitat of Upper Newport Bay has led to the creation of the Upper Newport Bay Ecological Reserve, which is under the administration of the California State Department of Fish and Game. This department's overall objectives for the Upper Newport Bay Ecological Reserve areas follow (Ref. 1):

- To improve the fisheries resources by increasing nurseries, forage, and spawning grounds
- To protect and enhance the habitat for a variety of water-associated wildlife, including endangered and rare species
- To provide unique scientific and educational use opportunities to study restoration of a wetland community
- To provide recreational opportunities compatible with major objectives.

These objectives, however, cannot be met for several portions of the bay due to existing environmental conditions. It is, therefore, the Department of Fish and Game's intent to implement, in a small portion of the bay, a Pilot Marsh Restoration Project (PMRP) that will establish the feasibility of restoring an environmentally stressed wetland to a close approximation of its original form (Ref. 1).

As an extension of the PMRP, further habitat enhancement of Upper Newport Bay is proposed through the establishment of a Protected Experimental Habitat (PEH). This project, which is also to be administered by the California Department of Fish and Game, will similarly be developed in a manner that is consistent with the Department's overall goals for the Ecological Reserve.

Additional actions recommended in the draft 208 Plan include: channelization of islands to improve the circulation and decrease stagnation, improvement of additional saltpan and tidal areas, and the development of a program for management of sediment reaching the Bay.

The environmental assessment of the habitat restoration program has been based on programmatic project descriptions provided by the Newport Irvine Waste-Management Planning Agency (NIWA) (Ref. 2), their consultants, Pomeroy, Johnston and Bailey (Ref. 1), and the California Department of Fish and Game (Ref. 3). In utilizing this information, a generic assessment of the proposed projects is presented below. Detailed information regarding the potential impacts of implementing the PMRP is available through the Department of Fish and Game, which has recently completed a draft EIR on this project. A similar report will be prepared for PEH prior to construction of the project.

Action 32: **The California Department of Fish and Game has commenced implementation of the Pilot Marsh Restoration Project (PMRP). This project shall be completed by January 1980. The estimated cost for this project is $540,000. Funds shall be provided by the State of California and shall be administered by the Department of Fish and Game.**

Action 33: **On completion of the PMRP the Department of Fish and Game shall establish a Protected Experimental Habitat (PEH) at a cost of approximately $2.5 million (1978):**

Restoration of an environmentally stressed wetland is the goal of both actions (Ref. 1), each of which approaches the task somewhat differently. The PMRP emphasizes the natural successional return of biological communities once dredging and channelization have been completed and the tidal prism increased. The PEH, however, incorporates several more artificial measures, e.g., hydrologic control of both tidal waters and freshwater and marsh grass transplantation into the habitat restoration design. Even though restoration measures vary, as does the exact spatial location of the projects, the basic construction techniques to be utilized are almost identical.

The major construction activity involves dredging, which will occur in response to the need for increasing the bay's tidal prism. The degree to which impacts occur in each project would vary only in magnitude. The potential impacts of the two projects, therefore, are discussed jointly below, with only the general impacts identified that would occur in any attempt to restore the environmentally stressed wetland in Newport Bay.

In the absence of more specific information, a significant improvement in the marine ecosystem can be expected with implementation of the PMRP. An important precondition to its success, however, is the careful coordination between the Watershed Sediment Management Program and the habitat restoration activities. Of significance would be the timing and rate of sediment deposit with respect to the specific ecological conditions that are desirable in the Bay.

BENEFICIAL IMPACTS

- Increased tidal prism, which would result from dredging of inter-tidal areas and channelization, could enhance food resources for fishes, provide increased habitat for spawning, and generally increase the Bay's marine nursery potention (Ref. 1).
- Proposed increases in saltwater and freshwater marsh habitat would provide 200 to 300 acres of suitable habitat for wetland organisms. This improvement is particularly significant since Newport Bay is the last remaining major estuary in the planning area and has suffered a substantial reduction in marsh acreage in the past few decades.
- Newport Bay provides a habitat for a number of rare and endangered species. Two of these, the Light-Footed Clapper Rail and Belding's savanna sparrow would benefit from the marsh restoration project.
- The creation of artificial islands to encourage the nesting of the endangered California least tern is potentially beneficial, especially given the disruptions that have occurred to their remaining South Coast nesting areas. Without more specific information, however, the degree to which their project will be successful cannot be determined.
- Marsh restoration could potentially increase the frequency of California brown pelicans in the bay. This would depend on the presence of suitably sized fish for foraging by this endangered species. Such an impact is only likely to occur in the distant future when restoration of the area is mostly completed. These birds currently, utilize shallow lagoons and marshes in Mexico and Central America for foraging.
- Migrant birds, which are abundant in the Upper Bay during the fall and spring months, would benefit from an additional 200 to 300 acres for nesting and feeding. Notable species such as the osprey, American egret, and curlews would also benefit in this manner, as would other less common seabirds.
- Resident birds such as the killdeer, snowy plover, and American avocet would benefit in the long term from the increased marsh habitat (Ref. 3).
- Restoration of the marsh habitat would provide ecological, education, and research benefits to residents of Southern California (Ref. 1). The provision for nature trails and information areas will be beneficial for people visiting the Ecological Reserve. The closing and revegetation of the existing trail on the west side of the Upper Bay will benefit the Ecological Reserve and those who visit.

ADVERSE IMPACTS AND MITIGATION MEASURES

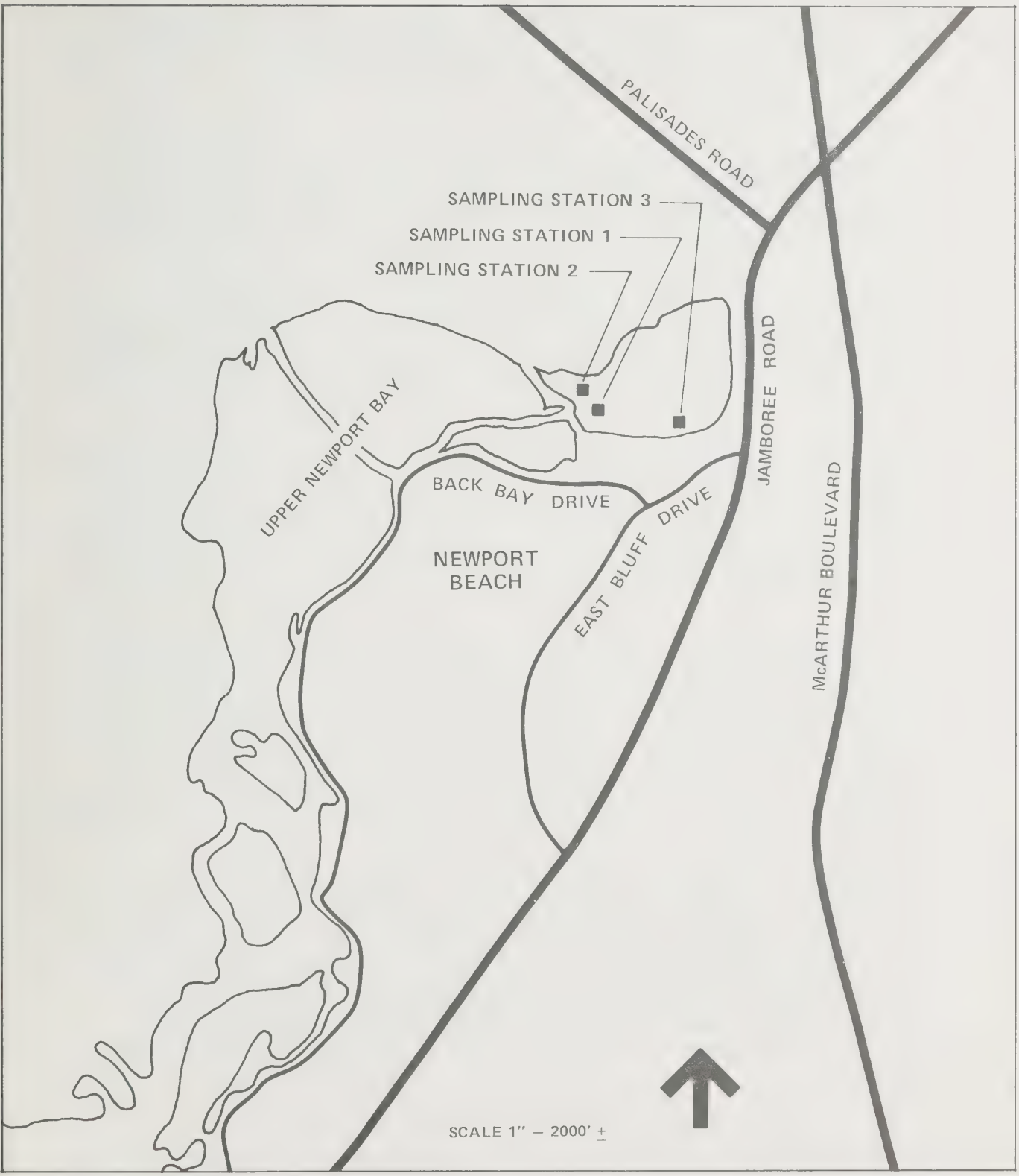
- Increased tidal prisms could increase the tidal flow velocities in narrow areas of the Bay, possibly resulting in greater erosion rates along the banks and bottoms of channels (Ref. 1).

- Dredging and subsequent dike removal would disrupt, if not destroy, animal habitats. Such impacts would occur in the general area of the salt plan existing in the uppermost portion of the Upper Bay. Although this area is commonly referred to as manmade and unaesthetic, it nevertheless functions as nesting grounds for a variety of birds and as a habitat for various other animals. The disruption should be temporary for marshland varieties of birds such as the killdeer, plover, and avocet, but would permanently reduce the habitat of terrestrial varieties such as the horned lark (Ref. 3). *While none of the salt pan birds are rare or endangered, a study analyzing the status of nesting birds, together with the identification of other forms of life on the salt pan, should be initiated to minimize harm to these organisms. In addition, it is suggested in the Pomeroy, Johnston, and Bailey background report that the most suitable months to dredge and avoid adverse environmental impacts (Ref. 1) are March, April, August, and September. The months of March and April, however, represent the onset of the breeding season for small populations of avocets and blackneck stilts in the Upper Bay and is also in the middle of the spring bird migration. Fish spawning in Upper Newport Bay is greatest between February and August, and fall bird migrations promote a heavy concentration of waterfowl during September. Scheduling of dredging should, therefore, be timed according to the biological activities in the immediate vicinity of the restoration.*

- Incorporation of proposed recreational uses into the Habitat Restoration Program would reduce the future ecological achievements of the Ecological Preserve. The presence of people in the preserve would potentially affect the type and level of biotic communities that could be revitalized and maintained. *To minimize these impacts, pedestrian access to the Upper Newport Bay Ecological Reserve will be controlled by a nature trail on the west side of Upper Bay and the lower two-thirds of Shellmaker Island, plus prohibited access to habitat being used by endangered wildlife. Boat traffic will be limited to small craft due to the shallowness of the estuary. Boat speed will be restricted to five miles an hour, and fishermen will be permitted to catch limited numbers of fish at certain times of the year. These controls would provide a balance between ecological preservation and recreational use.*

- Physical dredging operations can affect the aquatic ecology of the Bay in several ways. A preliminary evaluation of the potential environmental impacts that can be associated with dredging is presented below. The discussion indicates the major ways in which dredging in Upper Newport Bay could alter the environment and impact the ecosystem. This discussion emphasizes the potential impacts associated with increasing the amount of suspended solids in the Bay, including suspended toxic materials, and is organized by topical impacts issues, e.g., decreased clarity and effects on feeding. This information has been extracted from the background report entitled *Further Habitat Restoration and Dredging Operations,* prepared by the firm of Pomeroy, Johnston, and Bailey, for the Newport-Irvine Waste Management Planning Agency (NIWA) (Ref. 1).

  Heavy Metals: Although testing has shown the Upper Bay sediments to be essentially free of toxic metals, it may be useful to explain the mechanisms by which heavy metals can affect aquatic life. Release of heavy metals existing in trace quantities within the Bay's sediment could prove to be toxic to aquatic life in areas surrounding the dredge site. These materials, once resuspended in water, are free to migrate with the flow of the tides and to make themselves available to plants and animals. The acute toxicity of heavy metals apparently stems from their ability to poison critical enzyme systems of the aquatic organisms. Especially critical in this effect is the heavy metal, mercury (Hg). Microbes easily convert insoluble metallic mercury to soluble methyl mercury. In addition, lead (Pb) and some other metals are known to coagulate mucus on the gills of fish, which may lead to suffocation as well as direct gill damage. The organisms most directly affected by the resuspension of heavy metals would be the filter feeders which, as they feed, incorporate the metals into



SOURCE: Pomeroy, Johnston, and Bailey. *Task 2-1B, Further Habitat Restoration and Dredging Operations,* May 1978.

FIGURE IV-1
LOCATION OF SAMPLING STATIONS
UPPER NEWPORT BAY

their tissue thus allowing the diluted dose to be greatly concentrated. It should be noted that most of the above-mentioned effects occur at low concentration levels. When concentrations become acute, heavy metals directly attack an organism's nervous system, making them most especially susceptible to predation and eventually incapable of performing normal life functions.

Trace metals can make their way through the food chain in another way by, after being resuspended in water by the dredging process, being deposited on the benthic surface. Many fish who feed on benthic organisms will be directly exposed to these metals. The metals will eventually concentrate in the bird's tissue in the same ways that they are concentrated in aquatic organisms. Metals, if concentrated high enough, are very toxic to aquatic plant life.

In order to determine whether such considerations represent a real threat in Upper Newport Bay, five sediment samples were obtained in January 1978 and submitted to the Standard Elutriate Test. The results are given in Table IV-14 and indicate that the Upper Bay sediments are not contaminated. Disposal within the Bay seems possible and impacts due to toxic metals will be negligible.[a]

Radioactivity: The presence of radioactivity may be associated with a variety of chemical elements including heavy metals. In light of the fact that radioactive materials are readily absorbed on the surface of suspended particles, their presence in estuarine sediments is probable if waste streams feeding the estuary in question have been exposed to the substance. However, since the presence of radioactivity in any waste stream is directly related to the amount of mining which has taken place in the local watershed, the presence of radioactive elements in Upper Newport Bay sediments is unlikely.

Chlorinated Hydrocarbons: Long-lived chlorinated hydrocarbons tend to be adsorbed on suspended particles and accumulate in bottom sediments, only to be released in quantities later. Along with being toxic to terrestrial insects, chlorinated hydrocarbons can also be lethal to aquatic insects and crustaceans. Since agricultural activity has been very high in the San Diego Creek the presence of chlorinated hydrocarbons in Upper Newport Bay sediments cannot be eliminated on theoretical grounds. The elutriate obtained from sediment samples was examined for chlorinated hydrocarbons and none were detected. It seems, therefore, that the potential for environmental impact from this source is minimal.[b]

Reduction of Photosynthesis: When the sediment load of any water body increases for any extended period of time, primary production by phytoplankton, attached algae, and rooted vegetation is reduced. Reduction of this food base leads to a reduction or collapse of the species. King and Ball (1964) indicated that during a period of heavy sediment load a Michigan stream suffered a 61-percent decrease in primary producers, a 68-percent reduction in attached algae production, and a 58-percent reduction in the energy required by the community. If submerged vegetation dies it exerts a high oxygen demand during its decomposition, removes shelter for many organisms, exposing them to predation, exposes the stream bottom to scour and erosion, and basically disrupts the entire biotic community.

---

[a]Department of Fish and Game personnel, however, have information indicating that there may potentially be some contaminated heavy metal sediment (Ref. 4).

[b]Information available to the Department of Fish and Game indicates that recent analysis of sediment and tissue samples taken from San Diego Creek have detected chlorinated hydrocarbons at levels causing concern among biologists (Ref. 4).

TABLE IV-14

CHEMICAL AND BIOCHEMICAL CHARACTERISTICS OF ELUTRIATE FROM FIVE SEDIMENT SAMPLES TAKEN JANUARY 1978 FROM UPPER NEWPORT BAY[1]

Location	SS1	SS1	SS2	SS2	SS3
	Depth				
Constituent[2]	3/4-1'	1-2.5'	3/4-1'	1-3'	1-2.5'
TKN-N	4.500	6.600	0.900	5.700	3.000
IBOD	2.000	10.000	2.000	25.000	2.000
BOD_5	67.000	112.000	30.000	107.000	81.000
Dissolved Sulfide	<0.100	<0.100	<0.100	<0.100	<0.100
Cl	10,400	10,100	11,500	12,200	9,910
PO_4 as P	0.260	0.540	0.240	0.660	0.220
NH_3 as N	0.100	2.200	1.100	2.200	0.200
NO_3 as N	1.300	0.800	1.100	0.300	1.600
Pesticides[3]	NONE DETECTED →				
Pb	0.003	0.012	0.006	0.008	0.007
Cd	0.002	0.001	0.001	0.001	0.002
Cr	0.006	0.006	0.012	0.008	0.008
Cu	0.020	0.010	0.020	0.020	0.020
Zn	0.180	0.018	0.024	0.030	0.010
Hg	0.001	0.001	0.029	0.001	0.001
EC	26,000	19,000	33,000	25,000	14,000
pH (units)	7.750	6.250	6.200	6.000	6.100

SOURCE: Pomeroy, Johnston, and Bailey. Task 2-1B, Further Habitat Restoration and Dredging Operation, May 1978.

[1] SS: Sampling Station locations in Figure IV-1

[2] In ppm of elutriate prepared by mixing 100 gm sediment with 500 ml distilled water and draining the elutriate for analysis by standard methods.

[3] No pesticides existed in the soil at a level high enough for detection. The pesticides for which an analysis was run are all the chlorinated hydrocarbons. The system used for analysis was for electron capture gas chromatograph.

Clearly, such effects would constitute an important consideration in any dredging operation and must be properly addressed in the implementation of mitigating measures.

Decreased Clarity: Turbid waters have been shown to interfere with normal living patterns of fish in several ways. The most noticeable effect of turbidity on fish relates to the fact that during times of high turbidity swimming activity is reduced and the fish seek cover. Another study indicates that patterns of social dominance are altered and fishes engage in a coughing and gill scraping action. In addition, spawning of fish, such as salmon, is interrupted by turbid waters, causing the fish to crowd into limited clear areas.

There seems little question that even low levels of turbidity influence various behaviors of fish. Spawning in Upper Newport Bay is greatest during the months of February through August. The shiner, black, and white surf perches and white croaker are the dominant spawning fishes. The effect of turbidity on the survival rate of these young is not known with certainty, but should be treated as an area of concern.

Temperature Effects: The radiation of sunlight is absorbed by suspended particles in water and converted to heat. The heat is transferred to the water, especially on the water surface, and the water column is stablized, thus inhibiting vertical mixing. This condition deprives the bottom water layer of exposure to the atmosphere and, consequently, there develops a condition of low oxygen content, which can lead to anaerobic conditions.

Modification of temperature regime, oxygen content, and oxygen distribution profoundly affects the resident biotic communities. Since the flow of water in most areas of the Bay is not particularly swift, the condition of water column stabilization during periods of high turbidity is expected.

Oxygen Reduction and Respiratory Effects: Bottom disturbance in non-flowing waters can temporarily depress dissolved oxygen by releasing chemically reduced compounds such as sulfides. These materials, together with decomposing organic matter in the sediments, exert chemical and biological oxygen demands. Although local areas of low dissolved oxygen may exist where the bottom is disturbed, mixing with nearby oxygen-saturated water will soon restore oxygen equilibrium. In the vicinity of dredging activities temperature stratification will be minimal, and the temporary interruption of photosynthesis by suspended matter should not affect the overall oxygen balance of a large area water body. While very high levels of suspended solids can suffocate fish by clogging the gills and filling the opercular cavity, fish will normally avoid sites of construction activity by seeking more acceptable aquatic conditions. Bottom organisms having low mobility may suffer damage, depending on their individual tolerance levels.

The BOD levels of elutriate from the samples of Upper Bay sediment do not portend a significant risk of oxygen depletion or odor nuisance.

Changes in pH: Biological oxidation, as described above, increases levels of carbon dioxide (CO_2), thus decreasing pH. Since the mixed waters are highly buffered and are exposed to calcareous materials (shells in the sediments), the pH will be stabilized and is not expected to change as a result of dredging.

Effects on Feeding: The reduction of phytoplankton may seriously interfere with feeding and nutrition of aquatic animals. Many aquatic animals feed by straining and filtering of organic materials. High levels of suspeneded solids can clog the mechanism and cause

starvation. Increased turbidity can reduce feeding efficiency of an aquatic animal by interfering with the animal's ability to see food and by removing the natural odors of food, important in guiding the animal to appropriate food sources.

It has been demonstrated that when an animal is under stress from starvation, avoidance mechanisms, swimming, and endurance are greatly impaired.

Redeposition of Silt (Sedimentation): Within a relatively short time, the sand and salt and silt which is put in suspension by dredging will redeposit itself around the dredge site in a sequential manner—coarse grains first and the clays last. Although a continuous sediment source might smother bottom organisms, the temporary nature and shallow depth make it unlikely that any permanent damage to aquatic biological systems will result from a well-managed dredging program. Obviously there will be some redistribution of floating and attached communities, and a temporary reduction in habitat diversity.

Effect on Primary Production: Decreased primary production in the marsh area can be caused by direct covering of the vegetation or through scour. Since most of the primary producers in Newport Bay are planktonic, the possibility of these floating plants being covered is limited. It seems unlikely that dredging could have more than a minor temporary effect on suspended or floating organisms, either by reducing light transmittance or by inhibiting gas exchange. Gas exchange (oxygen and carbon dioxide) is necessary for survival of algae. Bottom-living vegetation is also removed by scouring; however, this condition is more prominent in swift-moving streams than in marshes.

Effect on Bottom Animals: Benthic organisms living in sediments of Newport Bay depend for their existence upon water circulation which provides adequate oxygen for respiration and which removes carbon dioxide and metabolic wastes before they reach poisonous concentrations. When a layer of sediment is deposited on top of the normal benthic surfaces, the interface between benthic organisms and tidal flow is decreased, consequently hampering the propagation of a healthy benthic habitat. If the layer of siltation is intense enough, the organisms may not be able to migrate upward fast enough, with the result that many species are being eliminated or greatly reduced in numbers.

Effect on Fish Populations: Silt deposition in Newport Bay affects fish populations in two ways: it reduces benthic food supply and it adversely affects redproduction by elimination of spawning areas or smothering the eggs after spawning has been completed.

Destruction of the bottom invertebrate populations acts to eliminate the major food supply of most fish species. The result of such destruction is the displacement of large fish populations necessary to maintain local marsh bird populations which feed on those fishes (gulls, herons, least terns, etc.).

Sedimentation affects spawning and survival of eggs in two ways. First, the sediments may eliminate fertilization and/or hatching of the eggs by physically covering them after they have been laid. Second, sedimentation may create an environment that is inhibitive of oxygen uptake by the eggs and embryos. This leads to deceleration of metabolic rate which, if continued, can be lethal. Death may also ensue from buildup of metabolic wastes and organic decomposition in the nesting area. It has been shown that nesting areas contaminated by decomposing salmon eggs will remain toxic for up to one year.

Effects on Hydrology of Bay: After dredging, where a large amount of material is removed and tide channels are restored, the tidal prism in Upper Newport Bay will be increased. Biological and cultural conflicts may arise as a result. However, it is presumed that, since the objective of the dredging is to improve the habitat, these trade-offs will be optimized.

Scour of Bottom Life: If the channels which will be dredged for free tide-flow are not designed properly, the velocity of the water moving through them will limit the population of plant and animal bottom dwellers. There is a certain velocity of water flow beyond which organisms have difficulty feeding and staying anchored. There is also a water velocity which, if not met, creates stagnancy, in which case dissolved oxygen (DO) in the water becomes so low as to prohibit life. The channels must be designed so that flow through them at the lowest tides of the year is not too low and that flow during the highest tides is not too high.

Tidal Velocity at Lower Bay: Due to the fact that a large amount of material will be removed from the bay and that channelization will be improved, much more water will be allowed to flow through the Lower Bay into the Upper Bay during tidal exchange. During inflow and outflow of tides water velocities at areas having restricted channels will be very high.

One such channel which may pose a navigational problem is the Pacific Coast Highway bridge. Even with the present tidal prism, water velocities at this site are so high as to restrict boat movements. A modeling study by UCI may provide answers to high channel velocity problems resulting from increasing the tidal prism.

The primary mitigation measures that could reduce the impacts of dredging during the construction of both the PMRP and the PEH is confinement of the dredge areas. A portion of the dredging activities, as currently planned, will occur in the salt pan areas of the Upper Bay. While serving as habitat for several species of birds and animals, these salt flat areas are considered to be of somewhat less significance than other more natural and productive downstream areas. Thus, if the decision is made to proceed with dredging activity, it would be better to restrict possible water quality and biological impacts to this area, rather than allow dispersion elsewhere. To accomplish this, the main dike, which was breached by the 1969 stormwaters, would have to be reconstructed. This would minimize fluctuation of water depth on the dredge site and would reduce the migration of suspended solids and turbid waters to lower reaches of the Bay. During the period that dredging operations would take place, a diversion for San Diego Creek waters may have to be built to permit discharge below the main dike and to the Lower Bay. After dredging and marsh restoration are complete, the main dike would have to be reopened and total flushing restored. These mitigation measures should reduce the impact of migrating sediment and other material outside the dredge area. The area being dredged (upstream of the dike) is expected to be fully disrupted, with the majority of aquatic organisms being displaced. Following completion of dredging it is estimated that one to three years will be necessary for reestablishment of a healthy biotic community (Ref. 1). *An additional mitigation measure to protect the Lower Bay from the effects of dredging would be to dispose of the dredged spoils in an appropriate location to prevent reentry into the Bay.*

- Energy resources would be consumed during dredging.
- Dredging operations could cause local air pollution. *Appropriate emission control devices would partially mitigate this potential impact.*

- Environmental considerations and limitations on spoils hauling and disposal would severely affect the cost of dredging, which is the major part of each program. Whereas the current cost of hydraulic dredging with pipeline disposal to a nearby point is about $2.25/cubic yard, lack of a close site (due to presence of the existing bridge at Pacific Coast Highway) suggests implementation of an alternative plan to pump spoils from within the diked area by pipeline to deep-water barges of 1,000 cubic yards capacity each. At 1978 levels, this cost is expected to be $6.50 to $7.50 per cubic yard. If mechanical dredging is used and the material is hauled to Mason Park for landfill, the 1978 cost would be roughly $5.50 per cubic yard of which $3.50 is for excavation and $2.00 is for hauling. An estimated 500 cubic yards per day would be handled.

  At unit cost estimates of $5.50 to $7.50 per cubic yard, the 1978 estimated cost of the dredging of the PEH alone would range from $1.375 million to $1.875 million. If another $1 million were allowed for repairing dikes, island stabilization, erosion protection, and planting, the total cost for the PEH could range from $2 to $3 million (1978 levels). These estimates are based upon the rough estimate of 250,000 cubic yards of material to be dredged, which does not include material that could be deposited in the Bay following a major storm before full sediment control is achieved in the watershed. Similar detailed cost breakdowns for the PMRP have not been provided. However, the estimated total cost for the PMRP is $540,000.

- Funding of the PMRP has already been received by the Department of Fish and Game from the state legislature. Funding sources for the more expensive PEH have not yet been determined but these may come from state, federal, or other sources. Since the State Department of Fish and Game receives revenues from hunting and fishing licenses and not from public taxation, it is unlikely to fund a project of this magnitude from its operating budget. The State Wildlife Conservation Board in Sacramento, however, can participate to a limited extent in projects in which the state has a paramount interest, provided there is a significant benefit to wildlife conservation and recreation. Another potential sources is the Newport Harbor Tidelands Fund, supported by revenues from tidelands oil income collected by the state. Funds are to be used for conduct and improvement of a harbor, for the protection of lands within the harbor's boundaries, or for the construction operation and maintenance of utilities, structures, or appliances necessary or convenient for the promotion or accommodation of commerce and navigation and the protection of the lands within the county where the harbor is located. Currently, no tax-supported funding sources appear likely.

Action 34: **On completion of the PMRP the Department of Fish and Game shall improve the lower portion of the Upper Bay to enhance wildlife habitat, increase circulation and decrease stagnation.**

Deepening the channel between North Island and the bank has been recommended in the draft 208 Plan (Ref. 1). The purpose of this channelization is to improve circulation and to limit the accessibility of North Island. Environmental impacts that could result from such channelization are discussed below.

BENEFICIAL IMPACTS

- Channelization of North Island would improve the tidal circulation and, thus, the flushing of the Bay. Such flushing is required if the restoration programs are to be successful.
- Accessibility to North Island would be significantly, though not totally, restricted. This would reduce the disruptive character of the island and possibly improve the site as a nesting place.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Channelization of North Island could disturb bird life in surrounding areas. *This impact could be minimized by timing the dredging to lessen interference with breeding birds; if the Department of Fish and Game has not initiated a study of the types and breeding periods of birds using North Island and its immediate vicinity, it should do so.*

- Dredging along North Island would adversely affect the benthos, macrophytes, and phytoplankton inhabiting the immediate area. In addition, migrating suspended solids, which would result from dredging, would not be contained in a particular vicinity. Thus, the impacts of island channelization could potentially be experienced in the lower reaches of the Bay, reducing in intensity as the distance from dredging increases. (Dredging impacts are identified in the previous Actions 32 and 33.) Spawning fish could also be adversely affected if the dredging occurs between February and August. *This latter impact can be minimized by timing the dredging to promote the least disruption to the most commercially and ecologically valuable fishes. The Department of Fish and Game should undertake a study to obtain this information if it has not already done so.*

- Dredging operations would result in increased energy usage, and possibly localized air quality impacts.

- Cost of this action is included in the PMRP program costs of the preceding action.

Action 35: On completion of the PMRP the Department of Fish and Game shall, when sufficient data is available from the PEH or PMRP, improve the salt pan and subtidal areas. The schedule for attaining the final configuration is 10 to 20 years and the anticipated cost is approximately $10 million (1978). Funding shall be provided by state, federal, and/or other funding sources and administered by the Department of Fish and Game.

If it is found that the first protected habitat accomplishes the goals of the Ecological Reserve, then other salt flat areas can be converted to protect habitats as well in the future.

BENEFICIAL IMPACTS

- Potential beneficial environmental impacts resulting from this action would be similar to those identified for the PMRP and the PEH, only the degree to which these impacts occur would be different.

ADVERSE IMPACTS AND MITIGATION MEASURES

Potential adverse environmental impacts (excluding costs) of this action would be similar to those identified for the PMRP and the PEH. Only the degree to which these impacts occur would differ.

- The anticipated cost of completing this work would be approximately $10 million (1978). Funding would be provided by the State of California.

Action 36: The California Department of Fish and Game, with assistance provided by the OCEMA, UCI and other monitoring agencies, shall assess the efficiency of upstream sediment controls and develop a program for management of sediment reaching the Bay. The anticipated yearly cost of this program is estimated to be $200,000 (1978) per year. Funding for this program shall be provided by state, federal, or other sources and administered by the Department of Fish and Game.

During rainstorms, the deposits of sediment in Newport Bay can be enormous as witnessed by the 1969 winter storms. If upstream control proves to be insufficient in restricting silt input, it may

become necessary to periodically dredge some areas of the Bay. It is impossible at this time, however, to predict how often and precisely where and to what extent dredging would have to take place to protect the investments of PMRP and the PEH (Ref. 1).

BENEFICIAL IMPACTS

- Maintenance dredging would protect the investment required for implementing the PMRP and the PEH.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Maintenance dredging of at least 30,000 cubic yards per year is anticipated. The potential environmental impacts of dredging have already been generally identified in the assessment of the PMRP and PEH actions.
- Annual cost of this program would be approximately $200,000. Specific funding mechanisms at this time are unknown.

SEDIMENT AND EROSION CONTROL

The San Diego Creek watershed in Orange County has seen a tremendous increase in urbanization in the past 20 years. Consequently the absorptive capabilities of the land have decreased, disturbance to the soil has increased, and intensified runoff has carried increasing amounts of sediment into San Diego Creek. During major storm flows, the adjacent lowlands, particularly Upper Newport Bay, are affected by flooding and sediment desposits.

The primary sources of the sediment deposited in Newport Bay are construction projects, agricultural land, the Lomas de Santiago foothills, and erosion of streams and flood control channels. Most of the deposits from the foothill area and a portion of those from channel erosion are unrelated to human activity, and are part of a natural ecosystematic process by which sediment is continually washed into the Bay. Construction and agricultural activities, however, are thought to have increased the amounts.

Regulatory actions are proposed for decreasing erosion from construction and agricultural activities. Construction projects are proposed for decreasing sediment contributions from the foothill areas and from channel erosion. Further study is needed to determine the amount of sedimentation that the Bay can maintain and the most cost-effective and environmentally sound methods for achieving a reduction in sedimentation.

Since the sediment control project is still in the formative stage, it is not yet possible to describe specifically those impacts that might occur. Those affects listed in this section might result from the kinds of actions being considered. The descriptions are general since the degree and specific nature of each will depend on the specific provisions of the program that is finally adopted.

The Sediment and Erosion Control program will result in the cooperation between a number of agencies and flood and erosion control jurisdictions. The increased standardization and communication that result should ultimately benefit the entire environmental management process in the Newport Bay area.

Action 37: Each appropriate jurisdiction within the Newport Bay watershed shall finance the development, adoption and enforcement of a grading ordinance or regulations for those portions of its area in the Newport Bay watershed. These ordinances or regulations shall be at least as stringent as the SCAG areawide model grading ordinance as amended by NIWA, and shall be implemented within six months of the adoption of the 208 Plan.

This action is nearly identical to Action 7 discussed earlier in the Nonpoint Source Waste Management Plan for the South Coast Planning Area (Construction Activities). The impacts are the same, with the following addition.

- Control and enforcement of such ordinances would require more personnel. It is estimated that a total of 17 additional inspectors will be needed at an estimated additional cost of $680,000 per year for all jurisdictions. Also, periodic retraining of inspectors may be needed approximately every five years. Additional control mechanisms are included within the financial alternatives, which will contribute to added indirect costs. Some are listed below. An additional indirect cost, involving work stoppages for noncompliance, would freeze invested capital while problems were being corrected. Other indirect costs would include:

  1. Additional grading costs to meet more rigid standards
  2. Possibility of reduced density in land developments, resulting in higher housing costs
  3. Higher landscape maintenance costs
  4. Higher fees and surety bond costs, such as interest, which developers would probably pass on to purchasers.

Action 38: The Regional Water Quality Control Board will set objectives for sediment discharge from agricultural lands and the Orange County Resource Conservation District shall develop and promote adoption of best management practices (BMPs) for the reduction of erosion consistent with these objectives. The Orange County Environmental Management Agency shall design and maintain its flood protection facilities to minimize sediment transport from sheet erosion of agricultural fields. (condensed wording)

The intent of this action is similar to that of agricultural Actions 11, 12, and 13 discussed earlier in the Nonpoint Source Waste Management Plan for the South Coast Planning Area. The impacts would be the same except for the associated costs.

The costs of implementing this action would be borne by the appropriate implementing jurisdictions. Technical and financial assistance for development and implementation of BMPs would be sought from the Secretary of Agriculture under the Agricultural Cost Sharing Program (§ 208(j) of the Clean Water Act of 1977).

Action 39: The Orange County Environmental Management Agency shall, where proven reasonably practicable, provide dams for sediment and flow retention in the Lomas de Santiago. (condensed wording)

The construction of 13 foothill debris dams is being considered for eight major canyons of the Lomas de Santiago foothill area. This area contributes approximately 30 percent of the total sediment load deposited in Newport Bay.

Studies are in progress to determine the specific number, kinds, and location of sediment control facilities desired. Tentative plans presently include the construction of two basins in Hicks Canyon at a cost of about $4.2 million (1978). These are part of the first phase of sediment control activities. The construction of 11 additional basins is proposed for a later phase.

Removal of sediments by the debris basins will increase the potential of the water to erode downstream channels. The project therefore includes stabilization of channels immediately downstream of the basins. This does not include the main channels farther downstream, which are the focus of Action 40.

In addition to removing sediments, the basins will also provide flood control for 100-year storms.

Specific locations have been recommended for the two Hicks Canyon basins (Ref. 5), but not for the other 11 facilities being considered. The impacts listed below are therefore sometimes discussed in more specific terms for the Hicks Canyon basins.

BENEFICIAL IMPACTS

- It is estimated that the two Hicks Canyon Dams, together with stabilization of the channels immediately downstream of them, would reduce sedimentation in Newport Bay by about three percent. All 13 dam projects would reduce sedimentation by about 14 percent or more.
- Flood hazard from storms of less than 100-year frequency could be reduced. Health and safety hazards from flooding could decrease, and there could be cost benefits from reduced flood damage and preservation of soil productivity in areas that might have been flooded.
- The effects of the debris basins on aquatic life in Newport Bay and on marine life around the mouth of the Bay would be generally beneficial. Siltation is always a problem with a coastal marsh as the landward freshwater input invariably carries sediment to the shallow embayment representing the marsh. In fact, most coastal marshes undergo a form of succession, during which land-based halophitic plants gradually encroach on the marsh itself (Ref. 6). Since the San Diego Creek drainage basin is the main source of sediment for Newport Bay, erosion control upstream would reduce sedimentation in the Bay and prolong the salt marsh's healthy existence (see also Adverse Impacts, below).
- Construction of the dams could result in additional employment opportunities for construction workers and others associated with the planning of the project.

ADVERSE IMPACTS AND MITIGATION MEASURES

- An inundation hazard would be created by the potential for failure of the dam and sudden release of waters. *Mitigation measures for reducing such a hazard should emphasize proper site analysis, design, construction supervision, inspection, and maintenance.*
- There could be adverse impacts to some of the biotic life of the Bay from removal of sediments by debris basins. Although a decrease in sediment deposits would benefit some kinds of aquatic and marine life by improving water quality, it could detrimentally affect other kinds by decreasing the flow of nutrients. It can be expected that implementation of the sediment and erosion control program would in general beneficially affect aquatic life in the Bay, marine life near the mouth of the Bay, and terrestrial life associated with the aquatic food chain, and would restore the Bay to a more nearly natural condition. However, some organisms would be detrimentally affected by changed sedimentation levels, and different balances of aquatic life in the Bay would

result from each varied level. *Studies are planned to further identify the sources, relative contribution, and means of transport of sediment into the Bay, and to further plan for the management of this influx. These studies should investigate the various balances of aquatic life that might result from different levels of sedimentation, and should attempt to establish desirable rates of sedimentation that would encourage the desired balance.*

- Some riparian communities would be eliminated by construction of the debris basins, which would be paved, and the stream channels, which would have gunite surfaces (Ref. 5). Such streamside areas, which provide shelter, food, and water for wildlife, are becoming increasingly rare in Southern California. The impact's effect is reduced by the fact that the basins would be situated as far downstream in the foothill area as is practical, and the affected areas would therefore be in or near areas already disturbed. *No onsite mitigation is possible, except for continuing studies to determine on a site-by-site basis the benefits of each dam relative to its costs, including the loss of riparian communities.*

- Removal of sediment from waters entering the Bay could decrease the supply of sedimentary materials deposited on the beaches downcurrent from the mouth of the bay, contributing to their gradual deterioration. This effect would probably be minor, since most sediments are trapped in the Bay. *Mitigation of this impact should begin with a study, as recommended above, to determine more specifically the effects of allowing various levels of sediment transport into the Bay. Artificial augmentation of beach sand could also be considered.*

- Very little archaeological work has been done in the Lomas de Santiago area. A literature search and survey done of the Hicks Canyon area as part of the preliminary study for the conceptual design of the Hicks Canyon basins (Ref. 5) located four previously recorded sites and one new site in the project area, none of great significance. It is probable that other sites exist in the other canyons of the foothill area where debris basins may be located. Damage to these sites could occur from construction of the proposed basins, roads, borrow pits, and channels. *The following mitigation measures should be employed to ensure that no significant scientific information or artifacts are lost (Ref. 5):*

  1. *Qualified archaeologists should survey project areas after specific plans are formulated.*

  2. *Preproject salvage of specimens should be conducted at all known sites.*

  3. *An archaeologist should monitor grading activities and should have the authority to divert or halt such activity pending assessment and salvage of specimens.*

  4. *Borrow areas for earth fill should also be surveyed prior to digging, as should other offsite areas such as construction roads and equipment storage yards.*

- One significant paleontological site exists near Bolero Lookout above Agua Chinon Wash, and another in Hicks Canyon. Several less significant sites are known, including five in the Hicks Canyon project area. Damage to paleontological sites could occur from construction of the proposed basins, roads, borrow pits, and channels. *Mitigation measures should be employed similar to those described above for archaeological sites.*

- The Subtask 5 report on San Diego Creek Watershed Sediment Management (Ref. 5) contains conceptual designs for the Hicks Canyon debris basins. The proposed dams are 35 and 27 feet tall. Basin acreages are 14.1 and 8.3. Concrete paving is recommended for upstream slopes and gunite trapezoidal channels downstream of the basins. Roads for construction and maintenance would be required. It is assumed that the other 11 proposed basins would be similarly designed. There would be considerable changes in the visual character of each of the construction areas. The degree to which this effect would be felt would depend on the number of people exposed to the change

and on their subjective interpretations of the visual impact, i.e., whether the facility appeared visually compatible to them with its surroundings or a visual disruption. The number of people exposed to the visual change would depend on the extent of the area from which the facility could be viewed. It is possible that some of the dams might be visible from a fairly large area of the flatland below the foothills. The present relatively undeveloped state of the foothills provides a natural setting that is a significant element of the overall character of the flatland area to the south and west, which includes the El Toro Marine Air Station and the rapidly developing Irvine area. Large man-made facilities placed in these foothills so as to be visual from a significant area could alter the nature of this element of the overall visual character.

Assuming that such changes were considered to be undesirable, the following mitigation measures might be employed to minimize the visual impacts:

1. *Locate the dams and associated facilities so as to minimize the area from which they are visible.*
2. *Screen the facilities with vegetation. Care should be taken to select vegetation similar to that in the surrounding area.*
3. *Design the facilities and select materials so as to minimize the disruptive visual effect. Landscape architects should be consulted in determining how this might best be accomplished.*

- Various methods are used to dispose of material collected in debris basins. It may be used as fill (it compacts badly and has limitations in this respect), dumped in areas especially chosen for this purpose, or hauled to landfills. Trucks used to haul the debris would add to traffic congestion and air pollution, and some landfill capacity would be used for the debris. *These impacts are relatively minor, and could probably not be mitigated in a cost-effective manner.*

- Increased erosion could occur at dam sites during the period of construction, increasing downstream aquatic and marine life. *These increases could be minimized by careful observance of grading ordinances and regulations.*

- Construction and maintenance of the dams would consume natural resources such as construction materials and energy. *Conservation of resources should be considered during design, construction, and operation of the dams.*

- Noise and activity at the construction sites could cause wildlife to leave the area during the construction period. Some animals might be displaced permanently, but, for the most part, wildlife would return to the general area after construction activity ceased. No significant lasting effect on the animal population of the general area should result from the construction activity. (Effects on the riparian community of the structures themselves, as opposed to the construction activity, were discussed earlier.) *Since little or no permanent impacts would result, mitigation measures intended to reduce construction noise and activity would probably not be necessary.*

- Table IV-15 gives the estimated construction costs of the two Hicks Canyon basins (Ref. 1).

TABLE IV-15

ESTIMATED COSTS, HICKS CANYON DEBRIS BASINS

Item	Costs
Hicks Canyon Debris Basin Construction	$ 926,000
Hicks Canyon Tributary Debris Basin Construction	722,000
Downstream Channel Stabilization	1,921,000
Utility Relocations	639,000
Total	$4,208,000

In addition to the construction and utilities relocation tasks, annual operation and maintenance of the facilities is expected to cost $16,000 (constant 1978 dollars). Thus, if the original capital costs of $4.208 million are amortized over a 50-year period at approximately 6 percent interest rates, the total annual costs could be about $283,000 ($267,000 amortization plus $16,000 operation and operation costs). Estimated construction costs for the remaining 11 debris dams would total about $31 million (Ref. 5).

It is the intent of the local agencies responsible for the funding of these facilities to seek state and federal funds to accelerate the implementation of the program. State and federal interests stand to benefit significantly from the project. The Pacific Flyway is an international resource for migratory wildfowl. The project will help further the objectives of the Federal Clean Water Act and will effect improvements in the small craft marina in the Bay, both federal goals. The U.S. Fish and Wildlife Service and the California Department of Fish and Game have an interest in habitat and recreation improvement. All of these agencies should be investigated as potential sources of funds for this project.

Action 40: Stabilize flood control channels in the San Diego Creek system. (condensed wording)

Channel erosion contributes a significant portion of the sediment load deposited in Newport Bay. This amount could increase if foothill debris basins were constructed, because the reduced sediment load of waters entering the channels would increase their erosive capability. It is estimated that the more aggressive waters might increase channel erosion to the point that approximately 20 percent of the sediment removed in the debris basins would be recovered in the channels, thus reducing the effectiveness of the dams. Stabilization of all unimproved channel banks downstream of the debris dams has been proposed to prevent this. Periodic removal of sediment accumulated in the channel would provide continuous in-channel sediment trapping capacity.

The impacts from this action will vary to some degree with the methods used for stabilization, e.g., concrete lining, rock lining, flattening of stream slopes, check dams, and vegetation. Since no specific techniques have been recommended at this time, the impacts listed below are general in nature.

BENEFICIAL IMPACTS

- Stabilization of stream channels could reduce the amount of sediment deposited in Upper Newport Bay.
- For effects on biota of Newport Bay, see Action 40 above.
- The stabilization work involved could result in additional employment opportunities for construction workers and others associated with the planning of the project.
- Various methods of stabilization could assist ground water recharge to varying degrees. Unlined stream bottoms, used in conjunction with controlled releases from debris basins, could result in a high proportion of conserved stormwater in favorable areas. (See possible adverse impacts below).
- Water velocity in the channels might be decreased or increased by stabilization, depending on the methods used. Changes in the velocity will affect the flow rate, and therefore the capacity of the channel to transport flood waters. Hazards from flooding would be decreased by any stabilization techniques that increased water velocity and therefore capacity.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Channelizing streams for flood control in ground water recharge areas has often had the effect of preventing recharge to ground water bodies. If some or all of the streams under construction are in hydraulic continuity with ground water, then recharge to ground water would be prevented if the bottoms of the channel were lined with impervious materials. *Mitigation measures would depend on the specific type of stabilization used and onsite characteristics at specific channel locations.*

- The effects of channel stabilization on aquatic life in Newport Bay and on marine life around the mouth of the Bay would be the same as those discussed for Action 39.

- Removal of sediment from waters entering the Bay could decrease the supply of sedimentary materials deposited on the beaches downcurrent of the mouth of the Bay, resulting in their gradual deterioration. This effect would probably be minor, since most sediments are trapped in the Bay. *Mitigation of this impact should begin with a study, as recommended above, to determine more specifically the effects of allowing various levels of sediment transport into the Bay. Artificial augmentation of beach sand could also be considered.*

- Water velocity in the channels might be decreased or increased by stabilization, depending on the methods used. Changes in the velocity will affect the flow rate, and therefore the capacity of the channel to transport floodwaters. Hazards from flooding would therefore be increased by any stabilization techniques that decreased water velocity. *No mitigation measures are necessary, since channels would be sufficiently large for 100-year storms, and a further increase in capacity is not considered to be cost-effective (Ref. 5).*

- Most of the flood channels to be stabilized lie in areas that are developed or disturbed to a considerable extent. It is possible, however, that sites of archaeological or paleontological significance might be disturbed by construction activity along the channels. *Before any work is done, an archaeologist should determine what areas along the channel might still contain artifacts or fossils and these areas should be surveyed.*

- Implementation of channel stabilization techniques would result in changes in the visual character of the stream channels and their surrounding areas. Since the major streams are already channelized and retain very little of their natural appearance, the basic visual impact of the structures would not change. Significant differences in appearance could result, however, from the addition of concrete paving, riprap, check dams, or vegetation to stabilize channels.

  The use of mitigation measures to reduce the extent of visual changes should be considered in areas where their impact would be especially pronounced. Vegetation could be used for screening as well as stabilization in certain areas. Where practical, materials should be selected that would integrate the structures visually with their surroundings (e.g., concrete in heavily urbanized areas, and riprap or vegetative stabilization in more natural areas). Consideration might be given to the use of different earth-toned shades of concrete, or to the inclusion of murals on some channel structures, as has been done in Los Angeles. The advice of a landscape architect should be sought in making the channels as visually nondescriptive as possible.

- A decrease in sedimentation due to channel stabilization could result in decreased transport of sand to beaches downcurrent of the mouth of the Bay, contributing to their gradual deterioration. This effect would probably be minor, since most sediments are trapped in the Bay. *Mitigation of this impact should begin with a study to determine more specifically the effects of allowing various levels of sediment transport into the Bay. Artificial augmentation of beach sand could also be considered.*

- Increased erosion could occur along stream channels during construction, increasing downstream sedimentation and dredging costs and possibly affecting downstream aquatic and marine life.

  These increases could be minimized by careful observance of sediment and erosion control ordinances for construction sites.

- Stabilization of stream channels could consume natural resources such as construction materials and energy. *The design, construction, and maintenance of structures for stabilization should consider conservation of resources.*

- Cost estimates have not yet been prepared for stabilization of the main flood channels on the NIWA area. Efforts are currently in progress to obtain funding by the Army Corps of Engineers, with local funding for interim programs to provide such stabilization and maintenance as is necessary until the Corps project is implemented.

Action 41: **Upstream improvements and administrative controls may not adequately control all of the sediment transported from the watershed. Therefore, the reach of San Diego Creek from Jamboree Road to the San Diego Freeway shall be maintained in such a manner so as to maximize its erosion control potential consistent with its intended purpose of flood control protection.**

Considerable amounts of sediment are now being removed from this portion of the channel. The recommended management plan would maximize the potential for trapping sediment here.

No specific recommendations have so far been made regarding what improvements should be implemented. The impacts below deal only in a general way with the intent of the proposed sediment maintenance plan.

BENEFICIAL IMPACTS

- In-channel improvements could reduce the amount of sediment deposited in Upper Newport Bay.
- The incorporation of in-channel improvements could result in additional employment opportunities for construction workers and others associated with the planning of the project.
- The effects of sediment removal on aquatic life in Newport Bay and on marine life around the mouth of the Bay, would be the same as those discussed for Actions 39 and 40.

ADVERSE IMPACTS AND MITIGATION MEASURES

- The effect of sediment removal on aquatic life in Newport Bay and on marine life around the mouth of the Bay, would be the same as those discussed for Actions 39 and 40.
- A decrease in sedimentation due to in-channel improvements could result in decreased transport of sand to beaches downcurrent of the mouth of the Bay, contributing to their gradual deterioration. This effect would probably be minor, since most sediments are trapped in the Bay. *Mitigation of this impact should begin with a study to determine more specifically the effects of allowing various levels of sediment transport into the Bay. Artifical augmentation of beach sand could also be considered.*

- The sediment removal facilities to be incorporated could change the visual character of the areas where they are constructed.

  Consideration should be given to mitigation measures which would minimize any visual disruption caused by the new facilities (vegetative screening, use of visually compatible materials, etc.)

- Construction and operation of facilities for removing sediment could consume natural resources such as construction materials and energy. *Conservation of resources should be emphasized during design, construction, and maintenance of these facilities.*

- Increased erosion could occur during construction at sites where sedimentation facilities are added to the channel. This could result in increased downstream sedimentation and dredging costs, and could possibly affect downstream aquatic and marine life.

  This increase could be minimized by careful observance of sediment and erosion control ordinances for construction sites.

- Annual costs of the San Diego Creek Channel sediment maintenance plan are estimated to be in excess of $200,000 (1978). Orange County and cooperating state, local, and federal agencies would have financial responsibility for the project.

Action 42: As an additional element of the continuing section program, NIWA shall assess the need and/or feasibility of downstream desilting basins. The following items shall be addressed in this assessment:

A. The need for a downstream sedimentation basin(s) with all other programs being implemented and in place (e.g., grading ordinances, BMPs, in-channel sediment management).

B. Identify alternative sites for downstream sediment control basins. Sites "A" and "B", identified in the Phase II subtask 5 report shall also be included as alternative sites.

C. The effectiveness of each site in sediment removal at various flow rates shall be assessed.

D. The costs of construction and maintenance of each alternative site shall be evaluated. These costs shall include not only the direct costs of construction and maintenance, but also the indirect costs to both the surrounding communities and private interests as a result of development of each site.

The financing of these studies shall be provided by additional state and federal 208 funding.

Since it would result in a study to assess a need and not in specific development activities, no direct impacts would occur from this action.

SURFACE SANITATION

The draft 208 Plan recommends that as existing street sweeping contracts expire or as existing mechanical equipment is retired, each appropriate jurisdiction should obtain vacuum or combination vacuum/mechanical street sweeping equipment within eight years after specific guidelines are established in the 208 Plan for the use of various types of equipment in achieving water quality goals. The Plan recommends that each jurisdiction modify existing street sweeping practices to attain the greatest water quality benefit based on season, refuse collection day, tree trimming operations, etc. It also recommends that each jurisdiction improve its streets within the NIWA area with curb and gutter, where needed, to facilitate removal of significant street pollutants. Lastly, the Plan recommends that each jurisdiction should identify areas within the watershed which are recurringly used as illegal dump sites and increase enforcement of applicable regulations.

Action 43: **At the expiration of existing street sweeping contracts, or as existing mechanical equipment is retired, each appropriate jurisdiction shall obtain vacuum or combination vacuum/mechanical street sweeping equipment. The final mix of mechanical and vacuum equipment shall provide a balanced street cleaning program. The optimum mix of equipment shall be attained no later than eight years after specific guidelines are established in the 208 Plan for the use of various types of equipment in achieving water quality goals. The cost of this equipment will vary by jurisdiction, depending on the amount of vacuum equipment needed and the equipment chosen. Each jurisdiction shall finance these costs through local funding sources.**

The acquisition of vacuum sweeping equipment to replace old mechanical sweepers would provide a more balanced street cleaning program for each of the jurisdictions within the South Coast Planning area. In the long term, such actions are designed to improve water quality while at the same time enabling water quality goals to be achieved. Impacts resulting from obtaining the optimum mix of street cleaning equipment are addressed in the following manner.

BENEFICIAL IMPACTS

- The optimum mix of street cleaning equipment would serve to minimize debris and pollutant-contaminant problems and to improve visual quality, sanitation needs, and the quality of surface water runoff into Newport Bay.
- The utilization of more vacuum sweepers would reduce the accumulation of fine solid particulates in the street, and then their potential emission to the air, since vacuum sweepers are slightly more effective in removing this fine material than mechanical sweepers (Ref. 7).
- Employment opportunities may be generated for personnel to operate and maintain street sweeping equipment.
- New street sweeping machines would reduce maintenance costs and problems that generally occur with equipment over 10-years old.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Utilization of more vacuum sweepers would increase ambient noise levels since they generate more noise than conventional mechanical sweepers (Ref. 8). *Increased noise levels could be mitigated by implementing various noise abatement measures (e.g., installation of noise-arresting equipment on sweeping machine motors).*

- Costs for developing and implementing an optimal mix of street cleaning equipment would be borne by each jurisdiction. However, such costs are expected to be minimal and may include: costs for a regional study to determine the specific guidelines regarding the optimal mix, costs of replacing depreciated equipment with new equipment to satisfy the mix, small losses incurred when older equipment is traded or sold through commercial dealers (this would occur when equipment exchanges with other communities failed), and small added costs incurred in training existing equipment operators to work with new equipment.

Action 44: **Each jurisdiction shall modify existing street sweeping practices to attain the greatest water quality benefit based on season, refuse collection day, tree trimming operations (e.g., slower sweeping speeds, double passes where needed.) This action shall commence immediately upon adoption of the 208 Plan. Costs are expected to be minimal and shall be financed by the implementing jurisdictions.**

Modification of street sweeping practices is designed to reduce indirectly the amount of surface pollutants and debris entering Upper Newport Bay and its tributaries. Improvements can take the form of changes in sweeping frequencies, coordination with refuse collection companies and tree trimming operations, scheduling of sweeping times, and enforcement of parking regulations. Environmental impacts which could result from such modifications are identified below.

BENEFICIAL IMPACTS

- Increasing the frequency of street cleaning would reduce the quantity of pollutants washed into Newport Bay during all periods of the year.
- Minimizing the first flush impact of the earliest rains by intensifying street cleaning efforts in the seasonal transition period from October through December would result in reductions in the amount of pollutants and contaminants entering Newport Bay.
- Appropriate scheduling of sweeping to correspond with times of least interference (e.g., sweeping business districts and industrial districts at night and residential areas during the daytime) would achieve higher debris/pollutant removal and hence improvements in quality of surface runoff.
- More frequent street cleaning with vacuum sweepers would improve air quality by reducing the amount of dust which could be suspended as particulate matter.
- Coordination with refuse collection companies could achieve higher removals if the collection and sweeping days were properly scheduled. In turn, higher removals would improve the quality of surface runoff.
- The establishment and enforcement of parking restrictions would allow street sweepers to operate more quickly, reduce the potential for accidents, and achieve higher removal efficiencies.
- Coordination with tree trimming operations could alleviate visual and obstruction problems posed by overhanging branches and limbs. Removal of overhangs would improve the operator's vision and alleviate obstructions which might have prevented the removal of debris close to the curb. Such action not only would achieve higher removals but also would reduce potential safety hazards.
- Providing more frequent street cleaning (e.g., number of times streets are swept per month, number of passes) would improve the visual character of swept areas.
- Employment opportunities would be increased by more frequent street cleaning.

ADVERSE IMPACTS AND MITIGATION MEASURES

- More frequent street cleaning would periodically increase localized ambient noise levels. *Installation of noise abatement equipment could mitigate this impact.*
- Increasing the vehicle miles traveled by street sweepers would result in increased air pollutant emissions and energy consumption.
- Parking restrictions may cause some inconveniences to establishments and residents already plagued by problems of inadequate parking space.
- For any given street cleaning efficiency, waste loads decrease and costs increase as street cleaning frequencies increase (greater expenditure of capital) (Ref. 8).
- Costs for modifying street sweeping practices for optimum efficiency for water quality would be borne by each jurisdiction. Such costs are expected to be minimal and include costs incurred by the jurisdiction for purchase and installation of restricted parking signs in areas not now posted, in addition to acquisition costs of additional enforcement vehicles and employment of personnel to enforce parking regulations.

Action 45: **Each jurisdiction shall improve its streets within the NIWA area with curb and gutter, where needed, to facilitate removal of significant street pollutants. Costs will vary by jurisdiction. Financing of these costs shall be provided through local funding sources or as a condition of development.**

Curb and gutter improvements would indirectly improve the quality of surface runoff entering Newport Bay by facilitating a more effective removal of debris and pollutants. The general impacts from such improvements are addressed below.

BENEFICIAL IMPACTS

- Construction of curbs and gutters would facilitate the removal of significant street debris and pollutants which would improve the quality of surface water runoff.
- Construction of curbs and gutters would improve drainage and thus reduce the potential problems associated with stagnating pools of water where mosquitoes breed and algae grows. Such actions would reduce potential public health hazards.
- Construction of curbs and gutters would generate employment opportunities.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Curb and gutter construction activities could increase erosion and cause potential sedimentation of downstream receiving waters during the wet season. *Such impacts could be mitigated by performing work during the dry season. Revegetation programs are recommended if sufficient land area is left exposed.*
- Curb and gutter construction activities would cause short-term increases locally in noise levels and particulate matter. In addition the local visual and aesthetic character of the area may be disturbed by the presence of construction equipment. *Noise disturbances could be mitigated by noise abatement measures, while dirt and dust problems could be lessened by frequently watering down the construction area.*

- Construction activities may cause short-term traffic congestion problems. *This impact could be mitigated by scheduling construction during off-peak hours and establishment of detours where necessary.*

- Construction of curbs and gutter would consume resources such as construction materials and energy. *Conservation of resources should be emphasized during design and construction.*

- Costs for constructing curbs and gutters would be the responsibility of the local jurisdiction. The fiscal impact would be dependent on the number of curb miles to be improved and would vary between each jurisdiction's needs.

Action 46: **Each jurisdiction shall identify areas within the watershed which are recurringly used as illegal dump sites and increase enforcement of applicable regulations. Costs for this activity will vary by jurisdiction and will be provided through local funding sources.**

The identification of illegal dumps and the enforcement of regulations to restrict illegal dumping could improve indirectly the quality of water reaching ground water basins and surface water bodies within the 208 Planning Area. The general impacts of these two actions are discussed below.

BENEFICIAL IMPACTS

- The quality of surface water runoff entering Newport Bay would be improved.
- Potential risks of ground water contamination would be reduced.
- Public health risks potentially could be reduced by prohibiting further illegal dumping.
- Removal of illegal dumping sites would improve the visual character of the area.
- Removal of illegal dumping sites would preserve property values in those areas presently adjacent to such illegal sites.
- Enforcement of these regulations potentially could increase local employment opportunities.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Removal of illegal dumping sites would increase the solid waste loadings at legal solid waste disposal sites. *The significance of this impact could be reduced by encouraging additional resource recovery.*
- Costs associated with the identification of illegal dumps and the enforcement of regulations to restrict illegal dumping would be borne by the local jurisdiction. Such costs include employment of personnel to perform these functions.

VESSEL WASTE MANAGEMENT

Many beneficial uses are derived from the unique estuarine environment of Newport Bay, including navigation. The draft 208 Plan recommends that the appropriate agencies enforce existing laws to control vessel-related pollution and modify the behavior of the public whose actions directly affect Newport Bay water quality through public education programs. To ensure that these policies are realized, the draft 208 Plan recommends that the Orange County Sheriff enforce existing laws requiring marinas to have sewage pump-out capability. In addition, the California Regional Water Quality Control Board is also requested to adopt regulations requiring retaining bags for in-the-water

hull cleaning of boats, when such devices are made available and proved effective and economical. It also recommends that the city of Newport Beach and Orange County should amend the existing maintenance agreement and increase funding to provide for emergency clean-up of Lower Newport Bay. Lastly, the draft Plan requires that SCAG should develop and implement public education programs designed to reduce vessel-related pollution.

Action 47: **The Orange County Sheriff shall enforce existing laws requiring marinas to have accessible sewage pump-out capability. This activity shall commence immediately upon adoption of the 208 Plan. Costs of implementation are anticipated to be minimal and shall be financed by the County of Orange or its contractors.**

Vessel-related pollution could be reduced by enforcing Section 776, California Harbors and Navigation Code, requiring that marina operators – owners of public and private facilities providing docking or berthing for vessels (excluding docks beside private residences) – provide adequate sewage retention device pump-out capability in conformance with California Water Resources Control Board standards. Such enforcement should require the installation and subsequent inspection and approval of an operational pump-out device or the official approval of a signed contract between the marina operator and a private mobile pump-out service (Ref. 9).

The impacts from such actions are addressed in the following general manner.

BENEFICIAL IMPACTS

- Enforcement of laws requiring marinas to have sewage pump-out facilities would have beneficial impacts on the Newport Bay environment if such facilities are used by boat owners. Unfortunately, the availability of these facilities does not guarantee they would be used by marina boat owners/users. Assuming that sewage pump-out facilities are used, the following improvements in the water quality of Newport Bay could be realized; reduction in the amount of discharge of human wastes, and garbage/debris which have proved harmful to the marine environment. Use of facilities would decrease the amounts of pathogenic organisms and chemical toxins released which can be harmful to human and marine life, and reduce BOD levels which may deplete oxygen sources.
- Public health hazards in the Newport Bay would be reduced if more boat owners/users would utilize sewage pump-out facilities. Pathogenic organisms in untreated human waste (when released in water bodies) have caused diseases such as typhoid and hepatitus (Ref. 9).
- Use of pump-out facilities by boat owners/users would reduce unsafe conditions by boat holding tanks e.g., potential explosion in tanks due to gas formation.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Sewage pump out facilities may be visually unappealing. *Provision or construction of protective covering material to disguise these facilities would lessen this impact.*
- Marina operators who until now have not provided such facilities have been in violation of the laws. Their costs of compliance might result in their being forced to pass these costs on to the boat operator.
- If the county provides the sewage pump-out facility, it would be impacted to the extent of paying for the costs associated with the facility. The county would pass its costs on to the marina operator and lastly to the boat owner. If the county provides the facility as opposed to the marina operators, lower costs would be passed on to the boat owner because of the county's ability to borrow required capital at more advantageous rates, thus reducing total costs.

- If the county investigates the possibility of providing a public bilge pump-out facility, investigations costs would be carried by the county while the facility costs would be carried by the users.
- Costs of implementation would be financed by Orange County or its contractors. Costs are expected to be minimal.

Action 48: **The United States Environmental Protection Agency shall support development of a device for in-the-water hull cleaning of pleasure craft which incorporates a retaining bag to collect the material removed. When these devices are made available and proven effective and economical, the Regional Water Quality Control Board shall require their use for in-the water hull cleaning. It is estimated that strict enforcement of these regulations will cost $15,000 (1978) per year, to be borne by the State of California.**

The hull cleaning directly in the water of small recreational boats has been identified to be a potential source of toxic metals and organic compounds in Newport Bay. The current significance of these inputs, however, is somewhat questionable (Ref. 9).

The potential release of pollutants occurs during the cleaning of hulls that have soft antifouling paints which are designed to release their toxins slowly as they wear. When a hull coated with such a paint is wire-brushed while in the water, large amounts of paint are removed along with the fouling organisms.

No local water quality data are available on potential pollution problems from vessel cleaning. Studies at other harbors show that portable hull cleaning devices for large oceangoing vessels are not a significant pollution problem when a retaining bag is used. Studies may be necessary in Lower Newport Bay to demonstrate the feasibility of such devices on small boats (Ref. 9).

BENEFICIAL IMPACTS

- By requiring retaining bags for in-the-water hull cleaning of boats, reductions could be realized in the amount of toxic metals and organic compounds (from antifouling paints and primers) deposited into Newport Bay. Such action would reduce potential harm to marine biota and humans.
- The use of retaining bags may reduce discharge of biological and particulate matter by 85 percent (Ref. 9).
- Use of retaining bags could improve water quality by slowing the rate of accumulation and buildup of trace contaminants, e.g., arsenic, cadmium, chromium, copper, lead, mercury, selenium, tin, and zinc.
- Use of retaining bags may indirectly improve public health by lessening contamination of edible shellfish.
- Potential employment benefits resulting from enforcement of the proposed action.

ADVERSE IMPACTS AND MITIGATION MEASURES

- It is estimated that the strict enforcement of these regulations would cost $15,000 (1978 dollars) per year, to be financed by the state of California. Costs would include employment of additional personnel for enforcement activities and use of patrol vessels.

- Production of the retaining bags would consume natural resources such as synthetic materials and energy. *Conservation of resources shall be emphasized in the design of these devices.*
- Additional costs would be borne by the individual boat owner, such as purchasing retaining bags, use of different devices and chemicals (phosphate-free detergents), and increased time spent ensuring adequate cleaning. These additional costs could result in increased rental of dry dock facilities or increased use of commercial hull cleaning services by boat owners. Both activities could contribute to an increase in revenues for those operators, increased employment, and an expansion of sales and other tax revenues to the state and local jurisdictions.

Action 49: **The City of Newport Beach and the County of Orange shall amend the existing maintenance agreement and increase its funding to provide for emergency cleanup of Lower Newport Bay.**

Changes in the existing maintenance agreement and increasing the funding to provide for emergency cleanup would improve the quality of the Newport Bay environment and ensure that emergency cleanup operations would be handled effectively. The general impacts from such actions are described below.

BENEFICIAL IMPACTS

- Indirect Bay improvements due to amending the existing maintenance plan and increasing emergency cleanup funding of Newport Bay would include reduction in the amount of floatable solids, improved visual quality of the Bay, improved marine habitat (due to removal of floatable solids that may be hazarous to organisms), improved water safety for water contact activities, and improved public health conditions.
- Maintaining the fund at satisfactory levels would permit rapid cleanups of spills and other pollution in the Bay as they occur, and before liability for them is established. Such actions would indirectly assist in improving the water quality and the environment of Newport Bay.

ADVERSE IMPACTS AND MITIGATION MEASURES

- Orange County and the city of Newport Beach would jointly finance the small fund; Increases in the fund from $15,000 to $20,000 would be borne by the two jurisdictions.

Action 50: **The Southern California Association of Governments shall develop and implement public education programs designed to reduce vessel-related pollution.**

The purpose of the proposed educational program is to increase public awareness of vessel-related pollutants in Newport Bay. The program includes the distribution of literature, inclusion of vessel-related pollution information in courses of the Coast Guard Auxiliary and the Balboa Power Squadron, and the involvement of community organizations. The general impacts for developing and implementing such a program are addressed below.

BENEFICIAL IMPACTS

- The effectiveness of brochures, lesson plans, and community involvement in increasing public awareness of vessel-related pollutants depends on the degree of cooperation from the public. If such programs are successful, the potential improvements in the water quality and the environment of Newport Bay could be substantial. These improvements have been addressed in detail in the preceding three actions and thus are not discussed here.

- Costs associated with developing and implementing such a program range from $34,300 to $52,300, depending upon the scope of the program (Ref. 9). Such costs would be funded through Section 208 of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500).

Action 51: Working with the EPA, U.S. Coast Guard, State Water Resources Control Board, Orange County Sheriff and any other appropriate governments, NIWA shall define the duties and authorities of such entities, to enforce existing state and local regulations in Newport Bay, and to cooperatively develop an enforcement program. Such programs shall thereafter be available for use by the implementing and enforcing entities as well as for use in developing the public educational programs.

Generally no adverse environmental impacts from this action would result since such action is primarily of a planning and development nature (enforcement programs). In addition, this action is geared toward defining the enforcement capabilities of those agencies listed and developing programs to improve the effectiveness of existing capabilities, hence adverse environmental impacts will be limited. However, once duties and authorities have been defined and enforcement ensues; indirect environmental impacts could be realized such as those identified in Actions 47, 48, and 49. Costs of developing this program have not been determined.

INTEGRATED WATER QUALITY EVALUATION

There are only infrequent investigations of biological and water quality conditions in Newport Bay and virtually no information is available on conditions before 1949. Since then, there have been some studies over short periods with little integration between various investigations. The absence of comprehensive, long-term surveys handicaps developing effective monitoring and management programs. It is therefore recommended in the draft 208 Plan that a comprehensive monitoring program should be developed for Newport Bay and its watershed, which integrates ongoing monitoring programs. Actions recommended to accomplish this are described below.

Action 52: Determine the source(s) of bacterial contamination to Upper Newport Bay and develop appropriate mitigation measures.

Action 53: Determine the source(s) and impacts of the high nutrient levels entering Upper Newport Bay via San Diego Creek and, where needed, develop appropriate mitigation measures.

Action 54: Assess the impacts of pollutants entering Upper Newport Bay via storm drains and the Santa Ana-Delhi Channel and, where needed, develop appropriate mitigation measures.

Action 55: Task 2-3: Ongoing UCI continuing action study.

1. Water quality monitoring in the major channels shall be performed to determine the pollutant inputs to Upper Newport Bay.

2. An intensive water quality survey shall be performed to determine detailed information regarding runoff quality and quantity from major land use types.

3. A special sediment transport analysis shall be performed to determine the amount of sediment which is carried from the watershed into Upper Newport Bay.

No direct impacts will occur from these actions, since they entail only an initiation of studies and do not result in any specific development.

UNAVOIDABLE ADVERSE IMPACTS

Although the Priority Program for Newport Bay is designed to improve water quality and biological resources, implementation would also cause a number of unavoidable adverse impacts, particularly during the construction phase. Of the mitigation measures proposed to reduce the severity of these adverse impacts, most cannot be assumed to be completely implementable, enforceable, and/or effective. As a result, most of the adverse impacts discussed above are considered unavoidable. Their magnitude and significance would vary, however, depending on the relative value placed on them by the general public, private interests, and regulatory agencies.

Projects that would require a major public investment include construction of the Habitat Restoration Program ($2-$3 million), further improvement of salt pan and subtidal areas ($10 million), Hicks Dam ($4.2 million), and the other dams ($31 million). Other projects requiring public investment are the periodic dredging of Newport Bay ($200,000) and in-channel improvements for San Diego Creek ($200,000); no estimates have been made for the channel stabilization project for San Diego Creek, the street sweeping and parking restriction programs, curb and gutter improvements, the closure of illegal dump sites, and the vessel wastes program. Relatively minor public costs would be involved in the in-water hull cleaning ($15,000 per year), the Newport Bay cleanup ($15,000-$20,000), and the educational ($35,000-$53,000) programs. Private investment would be required by boat owners for compliance with in-water hull cleaning requirements.

Implementation costs and other unavoidable adverse impacts are shown in Table IV-16.

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Although water quality and the estuarian environment would be improved, implementation of the Priority Program for Newport Bay could adversely affect the long-term productivity of other resources, such as financial, biotic, beaches, aquifers, archaeological/paleontological, visual quality, and soil productivity.

Diverting public funds for implementation of the program could delay funding of other beneficial programs or projects. A portion of private working capital would also be diverted from planned investments to implement some of the actions of this element of the draft 208 Plan. Energy requirements associated with the Habitat Restoration Program would also be a relatively significant consideration.

Although estuarian communities in Newport Bay would experience significant adverse impacts during the dredging process, most would probably not preclude the long-term productivity of the ecosystem. Those involving displacement/dislocation and/or potentially reduced nutrient supply, however, might cause some long-term impairment of ecosystematic functions. Specifically determining whether this would occur and to what extent is not possible during this programmatic phase of the draft 208 Plan.

TABLE IV-16

INTEGRATED CONTROL PLANS – NEWPORT BAY PRIORITY PROGRAM

SUMMARY UNAVOIDABLE ADVERSE IMPACTS

Potential Unavoidable Adverse Impacts[a]	Recommended Actions																							
	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Potential increases in erosion resulting from increased tidal prism	X										No direct impacts										No direct impacts	No direct impacts	No direct impacts	No direct impacts
Potential increases in stream channel erosion resulting from clear water flows						X																		
Decrease in supply of sediment to beaches resulting from erosion controls						X		X	X	X														
Increased erosion occurring during the construction of debris dams, storm channels, other sediment facilities, and curbs and gutters								X	X	X				X										
Temporary disruption/ destruction of animal habitats in general area of saltpan during dredging, debris removal; permanent destruction of horned lark habitat	X	X	X	X	X																			
Potential effects on biotic life from reduced sediment nutrients reaching Newport Bay								X	X	X														
Elimination of riparian communities resulting from construction of sedimentation dams							X																	
Temporary disturbance to wildlife resulting from dam construction activities								X																
Complete ecological restoration to maximum level of productivity potentially limited by presence of people and recreational activities	X	X		X																				
Increases in suspended toxic substances/ reduction of photosynthesis; clarity; O_2; changes in temperature, pH, feeding habits, and hydrological patterns; redepositing of sediments with effects on primary producers and bottom organisms; and potential navigational problems during and/or resulting from dredging	X	X	X	X	X																			
Decrease/prevent ground water recharge of channels lined[a]									X															
Potential decreases in agricultural productivity from decreased fertilizer use							X																	
Potential salt buildup in soil if recommended agricultural techniques not administered and monitored properly							X																	
Inundation hazard resulting from potential for dam failure or sudden release of water							X																	
Potential increase in flood hazard if velocity increases								X																
Potential disturbance/ destruction of archaeological sites during construction of dams and stabilization of flood control channels								X	X															
Increased demand for landfill capacity (legal)															X									
Impairment of visual quality resulting from use of recommended grading and erosion materials and techniques; probable changes in visual character depending on materials use in construction of storm channels, and sediment control facilities; potential visual impacts from construction of sewage pump-out facilities					X		X	X	X							X								
Consumption of natural resources, including energy	X	X		X	X	X		X	X			X	X		X	X								
Increased air pollutant emission from construction activities, dredging, and increased street sweeping frequency	X	X		X	X			X	X				X											
Slight increase in traffic congestion if debris from sediment containment facilities trucked to landfills								X		X														
Increased noise levels resulting from vacuum street sweepers and more frequent street sweeping; localized noise impacts from construction of curbs and gutters												X	X	X										
Public inconvenience from parking restrictions													X											
Potential for increased public resentment of government regulations						X	X																	
Costs	$540,000 (Construction)	$2-3 million (Construction)	Costs part of $540,000 in Action 33	$10 million (Construction)	$200,000/yr (Sediment management)	$680,000 (Plus additional undetermined costs)	Undetermined	b	Undetermined	$200,000		Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	$15,000/yr	$15,000-20,000 (Increase in fund)	$34,300-$52,300	Undetermined				

[a] Since the recommended mitigation measures cannot be assumed to be totally implementable, enforceable, and/or effective, most of the adverse impacts were considered to be unavoidable. The significance of these adverse impacts, however, would be variable.

[b] $4,208,000 (Construction of two Hicks Canyon Dams); $16,000/yr (Operation and maintenance); $31 million (Remaining dams).

Construction of the 13 debris dams and, to some extent, channelization of San Diego Creek would eliminate some riparian areas, which are regarded as a regionally significant reduction in the long-term productivity of this increasingly stressed biotic community.

These actions might also decrease sediment transport to such an extent that beaches in the vicinity of Newport Bay might experience some minor deterioration, although, assuming no corrective measures were taken, this might be offset by increased erosion occurring as a result of cleaner water flows in the San Diego Creek and/or increased velocities in the Bay. A decrease in aquifer recharge might also be experienced if permeable areas in San Diego Creek are lined. Archaeological and/or paleontological sites could be destroyed if surveying and monitoring are not programmed into the construction phase, particularly for the debris dams.

The visual implications of imposing the debris dams into an otherwise natural environment is also considered of significance, depending on the viewers' perceptual experience and expectations. Although a subjective consideration, perceived conflicts/incompatibilities would reduce the aesthetic enjoyment of the natural environment, at least to some extent. Changes along San Diego Creek might cause similar reactions, although to much less of a degree given existing channel improvements. The suggested techniques to reduce runoff and erosion from construction sites—such as concrete terracing and swales—could also reduce the long-term visual quality of affected areas.

Wtih respect to the development and adoption of BMPs to reduce erosion, the Soil Conservation Service indicates that salt buildup should not occur if the recommended irrigation practices are administered properly and carefully monitored. If these precautions are not observed, however, there could be a loss of soil productivity. Some loss in productivity could also be experienced as a result of limiting the amount of fertilizer that can be effectively used.

IRREVERSIBLE COMMITMENT OF RESOURCES/ENVIRONMENTAL CHANGES

Financial, energy, biotic, visual, and possibly archaeologic paleontological resources would be irreversibly committed in order to implement this element of the draft 208 Plan.

The total financial commitments to be used have not been determined at this time due to uncertainties regarding local agency participation, placement of debris dams, and selection of construction techniques. Similarly, energy consumption/requirements are also unquantified at this time.

Some aquatic and estuarian biota will be irreversibly lost during dredging and construction activities. Of more significance would be the loss of riparian habitat with construction of the 13 debris dams.

Destruction of archaeological/paleontological sites or artifacts not protected during construction could represent a significant loss, depending on their nature.

Assuming the infeasibility of removing the debris basins once constructed, a slight deterioration of the beaches in the vicinity of the Bay might be experienced; the degradation in visual quality in surrounding hillsides would represent a permanent loss of valuable resources.

GROWTH-INDUCING IMPACTS

Implementation of the Nonpoint Waste Management Plan would not remove obstacles to growth or otherwise enhance the opportunity or desirability for growth.

EFFECTS FOUND NOT TO BE SIGNIFICANT

All environmental effects identified in the preparation of this document are included, regardless of their degree of significance. In many cases, because of the level of specificity of the plan, it has not been possible to determine accurately the relative significance or insignificance of an impact. In other cases, impacts have been identified as being relatively insignificant. In no case, however, are any impacts omitted because of their lack of significance.

REFERENCES

1. Pomeroy, Johnston and Bailey. *Subtask 1—Further Habitat Restoration and Dredging Operations,* May 1978.

2. Newport-Irvine Waste-Management Planning Agency. *Final Report NIWA 208 Draft Plan Element Report,* September 1978.

3. Hein, Ron F. California Department of Fish and Game Personal Communication, September 1978.

4. Hergerseel Perry California Department of Fish and Game Personal Communication, September 1978.

5. Pomeroy, Johnston and Bailey. *Subtask 5—San Diego Creek Watershed Sediment Management Plan,* May 1978.

6. Redfield, A. C. Development of a New England Salt Marsh Ecological Monograph 42: 201-237, 1972.

7. Tetra Tech, Inc. *Draft Report Task 2-1B: Design and Evaluation of Candidate Management Strategies: Newport Bay—Surface Sanitation Program,* February 1978.

8. J. B. Gilbert and Associates. *Water Quality Control Investigation: Urban Runoff Construction Activities, and Agricultural Practices,* August 18, 1978.

9. Tetra Tech, Inc. *Final Report Task 2-1B: Design and Evaluation of Candidate Management Strategies: Newport Bay—Vessel Waste Management,* April 1978.

SECTION V

Alternatives to the Proposed Project

Alternatives to the Proposed Project

Three types of alternatives have been evaluated as alternatives to the draft 208 Plan: the "no project" alternative, alternative policies for areawide water quality management, and alternative actions for water quality improvement. Each of the alternatives is discussed separately below.

"NO PROJECT" ALTERNATIVE

A major alternative to the preparation of the draft 208 Plan is the "no project" alternative. In this instance, the no-project alternative would mean that a 208 Plan for the South Coast area would not be prepared. This alternative is considered infeasible for two reasons. First, the preparation of 208 Plans is required by Section 208 of the Federal Water Pollution Control Act of 1972 (Public Law 92-500), as amended, to ensure that the 1983 water quality goals of the Act are achieved. If a 208 Plan were not prepared by local agencies in the South Coast area, it would have to be prepared by the state, since the state must bear the ultimate responsibility for preparation of 208 Plans. Second, as the agency designated by the governor for Areawide Waste Treatment Management Planning in the South Coast area, SCAG is unquestionably obligated to prepare a 208 Plan. For both of these reasons, the "no project" alternative has been rejected as a reasonable alternative to the proposed project.

ALTERNATIVE POLICIES FOR AREAWIDE WATER QUALITY MANAGEMENT

As part of the development of the draft 208 Plan, alternative areawide water quality management policies were evaluated. The process used in the evaluation of alternative policies and the selection of policies for inclusion into the draft 208 Plan was previously described in Section III of this EIR. The reader is referred to this section for more information on the alternative policy development and evaluation process.

The evaluation of alternative areawide policies spanned a seven-month period, involving many elected officials and public and private sector interests and producing over 2,000 pages of documentation. The following documents are incorporated herein by reference as documentation of the evaluation of alternative areawide policies for water-quality management:

1. Draft Areawide Policy Alternatives for Water Quality Management: Issue Paper 1 — Alternatives, Issue Paper 2 — Evaluation, May 1, 1978, SCAG 208-23.
2. Public Record for Draft 208 Areawide Policy Alternatives for Water Quality Management and Development Guide Alternative Population, Housing, Employment and Land Use Forecast, July 1978; Addenda, August 1978, SCAG.

3. Hearing Board Report on Draft 208 Areawide Policy Alternatives for Water Quality Management and Draft Development Guide Alternative Population, Housing, Employment, and Land Use (PHEL) Forecasts, July 1978, SCAG.
4. Milestone Report — A Regional Profile (Revised June, 1978), SCAG.
5. Milestone Report — A Regional Profile, January 20, 1978, SCAG.
6. Public Record for the 208 Early Action Program Design and Milestone Report, April 1978, SCAG 208-24.
7. Report and Recommendations of the Public Hearing Board on the 208 Milestone Report and Early Action Program Design, May 1978, SCAG 208-25.

A summary of the evaluation of alternative policies is presented in this section. The methodology used in the evaluation is summarized as follows:

- Advantages and disadvantages of each policy alternative identified by each agency were sorted into environmental factors, socioeconomic factors, and institutional/political factors.
- For each factor, the number of agencies identifying advantages and disadvantages for a particular policy alternative was counted.
- The number of agencies identifying advantages was compared with the number of agencies identifying disadvantages to attain a summary evaluation.

The results of the alternative policy evaluation were compiled and summarized graphically to represent the advantages and disadvantages of each policy alternative. The graphic symbols are described in Figure V-1. The summary evaluations are presented immediately following the figure.

ALTERNATIVE ACTIONS

NONPOINT SOURCE WASTE MANAGEMENT PLAN

SPILLS OF HAZARDOUS SUBSTANCES

Proposed Action 1: **Develop and implement comprehensive contingency plans for spills of hazardous substances.**

Proposed Action 2: **Implement specific subregional actions to improve containment and cleanup procedures for hazardous substance spills as described in Table IV-1 and as recommended by participating agencies.**

Since these two actions are complementary and were assessed simultaneously in Section III of the EIR due to similarity of effects, they are also considered as a single action here.

Alternative Action 1/2a: **Continue present activities with regard to cleanup and containment of spills of hazardous substances.**

This alternative would result in the continuation of existing hazardous substance spill response mechanisms of federal, state and local agencies in the South Coast area. The adverse environmental effects of this alternative would be greater than those described for Proposed Action 1 in Section IV. Potentially increased likelihood of ground water and surface water degradation due to uncontrolled spills could result. Adverse economic effects of this alternative would be less than those identified for the proposed action since the costs of improving local spill response efforts would not exist. Beneficial impacts of the alternative action would be fewer than those identified for the proposed action. In particular, the risks of spills would not be lessened by the alternative action. This alternative was rejected since it does not minimize duplication of effort and costs and does not result in a potential reduction of the public health and welfare risks from hazardous substance spills.

FIGURE V-1
SUMMARY EVALUATION OF ATTERNATIVE AREAWIDE POLICIES FOR WATER QUALITY MANAGEMENT

CODE FOR SUMMARY EVALUATION OF POLICY ALTERNATIVES

- ○ MAINLY ADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◔ MAINLY ADVANTAGES, BUT SOME DISADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ◑ MIXED ADVANTAGES AND DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◕ MAINLY DISADVANTAGES, BUT SOME ADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ● MAINLY DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION

ISSUE: I.1 AN AREAWIDE WATER QUALITY MANAGEMENT [illegible] INTEGRATING POINT AND NONPOINT [illegible]

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT CURRENT INTEGRATION AS SUFFICIENT	◑	◕	◑
2. SUPPORT FURTHER INTEGRATION TO IDENTIFY SPECIFIC NEEDS IN SPECIFIC WATERSHEDS.	○	◔	◕
3. SUPPORT FURTHER INTEGRATION THROUGHOUT THE REGION.	○	◕	◑

ISSUE: I.2 PREVENTIVE AND PROTECTIVE APPROACHES TO WATER QUALITY MANAGEMENT WHICH MINIMIZE THE ENTRY OF POLLUTANTS TO RECEIVING WATERS.

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT WATER QUALITY CONTROL MEASURES WHERE REQUIRED BY STATE AND FEDERAL LAW	◑	◔	◑
SUPPORT PREVENTIVE WATER QUALITY CONTROL MEASURES WHERE ANALYSIS SHOWS THEY WILL PROTECT WATER QUALITY.	○	○	◑
SUPPORT PREVENTIVE WATER QUALITY MEASURES UNIVERSALLY TO ACHIEVE THE 1985 "NO DISCHARGE OF POLLUTANTS" FEDERAL GOAL.	○	●	◑

ISSUE: II.1 PREVENTING AND CONTROLLING NONPOINT SOURCES OF POLLUTION THROUGH LAND USE PLANNING AND CONTROL.

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT CURRENT PRACTICES AS SUFFICIENT.	◕	◕	◑
[illegible] SUPPORT INCREASED [illegible] CONSIDERATION OF NONPOINT SOURCES IN LAND USE [illegible] AND [illegible] WHERE WATER [illegible] STANDARDS ARE VIOLATED. SEEK ADDITIONAL [illegible]	◔	◔	◑
[illegible] CONSIDERATION OF NONPOINT [illegible] PLANNING AND CONTROL [illegible] GUIDELINES DEVELOPED WITH [illegible]	○	◑	◑

ISSUE: II.2: PROTECTION OF ENVIRONMENTALLY SENSITIVE LANDS TO PREVENT WATER QUALITY PROBLEMS, INCLUDING PROTECTION OF LAND OVERLYING AQUIFERS FOR RECHARGE PURPOSES.

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT CURRENT LOCAL PRACTICES AS SUFFICIENT.	◑	◑	◑
2. SUPPORT FURTHER PROTECTION OF ENVIRONMENTAL SENSITIVE LANDS WHERE WATER QUALITY STANDARDS ARE BEING VIOLATED. SEEK ADDITIONAL INCENTIVES FOR PROTECTION.	◔	◕	◑
3. SUPPORT FURTHER PROTECTION OF ENVIRONMENTALLY SENSITIVE LANDS THROUGH AREAWIDE GUIDELINES, INVENTORIES, AND CLASSIFICATIONS. SEEK ADDITIONAL INCENTIVES FOR PROTECTION.	○	◕	◑

ISSUE: II.3 PREVENTIVE MANAGEMENT STRATEGIES FOR CONTROL OF POLLUTANTS IN STORMWATER RUNOFF

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT MANAGEMENT OF WASTELOADS IN RUNOFF WHERE THEY HAVE CAUSED KNOWN WATER QUALITY PROBLEMS. SUPPORT FURTHER MANAGEMENT ONLY AFTER FURTHER RESEARCH	◑	◑	◑
2. SUPPORT ADDITIONAL MANAGEMENT OF WASTELOADS IN RUNOFF TO PROTECT WATER QUALITY IN WATERSHEDS WITH LARGE POLLUTANT LOADS, SIMULTANEOUSLY WITH ADDITIONAL RESEARCH	○	●	◑
3. SUPPORT ADDITIONAL MANAGEMENT OF WASTELOADS IN RUNOFF TO PROTECT WATER QUALITY THROUGHOUT THE REGION	○	◕	◑

ISSUE: II.4: PREVENTIVE MANAGEMENT STRATEGIES FOR RUNOFF AND EROSION CONTROL AT CONSTRUCTION SITES

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT EXISTING PRACTICES AS SUFFICIENT	●	◔	◔
SUPPORT STRICTER ENFORCEMENT AND MODIFICATION OF GRADING ORDINANCES IN AREAS WHERE ANALYSIS SHOWS DAMAGE WOULD BE REDUCED.	○	◕	◑
3. SUPPORT STRICTER ENFORCEMENT AND MODIFICATION OF GRADING ORDINANCES THROUGHOUT THE REGION TO PROTECT WATER QUALITY	○	●	◕

ISSUE: II.5: PREVENTIVE MANAGEMENT STRATEGIES FOR CONTROL OF AGRICULTURAL SOURCES OF POLLUTION.

POLICY ALTERNATIVES	[illegible]	[illegible]	[illegible]
SUPPORT MANAGEMENT OF AGRICULTURAL NONPOINT SOURCES FOR SPECIAL AREAS WHERE AGRICULTURE HAS CAUSED A KNOWN WATER QUALITY PROBLEM	◑	◑	◔
2. SUPPORT PREVENTIVE MANAGEMENT STRATEGIES FOR AGRICULTURAL NONPOINT SOURCES WHERE ANALYSIS SHOWS WATER QUALITY WOULD BE PROTECTED	○	●	◔
3. SUPPORT PREVENTIVE MANAGEMENT STRATEGIES FOR AGRICULTURAL NONPOINT SOURCES THROUGHOUT THE REGION TO PROTECT WATER QUALITY	○	●	◕

FIGURE V-1 (Continued)

CODE FOR SUMMARY EVALUATION OF POLICY ALTERNATIVES

- ○ MAINLY ADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◔ MAINLY ADVANTAGES, BUT SOME DISADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ◑ MIXED ADVANTAGES AND DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◕ MAINLY DISADVANTAGES, BUT SOME ADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ● MAINLY DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION

ISSUE: II.6: PREVENTIVE MANAGEMENT STRATEGIES FOR MISCELLANEOUS NONPOINT SOURCES OF POLLUTION (AERIAL FALLOUT, SALINE WATER INTRUSION, SILVICULTURE AND MINING)

A. AERIAL FALLOUT

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT REDUCTION OF AIR EMISSIONS TO MINIMIZE THEIR AIR QUALITY IMPACTS.	○	●	◔
2. SUPPORT REDUCTION OF AIR EMISSIONS TO MINIMIZE THEIR IMPACT ON THE TOTAL ENVIRONMENT.	○	◕	◕

ISSUE: II.6: PREVENTIVE MANAGEMENT STRATEGIES FOR MISCELLANEOUS NONPOINT SOURCES OF POLLUTION (AERIAL FALLOUT, SALINE WATER INTRUSION, SILVICULTURE AND MINING)

B. SALINE WATER INTRUSION

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT MANAGEMENT OF SALINE WATER INTRUSION WHERE KNOWN GROUNDWATER QUALITY PROBLEMS HAVE OCCURRED.	◔	◑	◔
2. SUPPORT PREVENTION OF SALINE WATER INTRUSION TO PROTECT GROUNDWATER SUPPLIES.	○	◕	◑

ISSUE: II.6: PREVENTIVE MANAGEMENT STRATEGIES FOR MISCELLANEOUS NONPOINT SOURCES OF POLLUTION (AERIAL FALLOUT, SALINE WATER INTRUSION, SILVICULTURE AND MINING)

C. SILVICULTURE

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT MANAGEMENT OF SILVICULTURAL NONPOINT SOURCES WHERE KNOWN WATER QUALITY PROBLEMS HAVE OCCURRED	◔	N/A	○
2. SUPPORT PREVENTIVE MANAGEMENT STRATEGIES FOR SILVICULTURAL NONPOINT SOURCES TO PROTECT WATER QUALITY	○	◔	◑

ISSUE: II.6: PREVENTIVE MANAGEMENT STRATEGIES FOR MISCELLANEOUS NONPOINT SOURCES OF POLLUTION (AERIAL FALLOUT, SALINE WATER INTRUSION, SILVICULTURE AND MINING)

D. MINING

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT MANAGEMENT OF MINING NONPOINT SOURCES WHERE KNOWN WATER QUALITY PROBLEMS HAVE OCCURRED.	◔	◑	◔
2. SUPPORT PREVENTIVE MANAGEMENT STRATEGIES FOR MINING NONPOINT SOURCES TO PROTECT WATER QUALITY.	○	◑	◔

ISSUE: III.1: CONSISTENCY OF WASTEWATER MANAGEMENT PLANNING WITH AREAWIDE GROWTH POLICIES AND DEMOGRAPHIC PROJECTIONS

A. DESIGN CAPACITY OF WASTEWATER FACILITIES

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT SIZING OF WASTEWATER FACILITIES BASED ON "ULTIMATE DEVELOPMENT" DETERMINED FROM LOCAL PLANS OR ZONING. ENSURE CONSISTENCY OF FACILITIES WITH AREAWIDE GROWTH FORECASTS THROUGH TIMING OF FACILITIES USE.	●	◑	◕
2. SUPPORT SIZING OF WASTEWATER FACILITIES BASED ON LONG-TERM AREAWIDE GROWTH FORECASTS. ENSURE CONSISTENCY OF FACILITIES WITH AREAWIDE GROWTH FORECASTS THROUGH TIMING OF FACILITIES USE.	◑	◑	◕
3. SUPPORT SIZING BASED ON RELATIVELY SHORT-TERM AREAWIDE GROWTH FORECASTS. ENSURE CONSISTENCY OF FACILITIES WITH AREAWIDE GROWTH FORECASTS THROUGH LOCATION AND SIZE OF FACILITIES AND THROUGH TIMING OF FACILITIES USE.	○	◕	◔

ISSUE: III.1: CONSISTENCY OF WASTEWATER MANAGEMENT PLANNING WITH AREAWIDE GROWTH POLICIES AND DEMOGRAPHIC PROJECTIONS

B. DEVELOPMENT POLICY

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. IN LOCATION WITH WASTEWATER CAPACITY DEFICIENCIES, ENCOURAGE LOCAL GOVERNMENTS TO RE-EXAMINE DEVELOPMENT POLICY.	◕	◕	◑
2. IN LOCATIONS WITH WASTEWATER CAPACITY DEFICIENCIES, ENCOURAGE DEVELOPMENT TO BE RESTRICTED UNTIL DEFICIENCIES ARE CORRECTED AND MONITORING OF SYSTEM CAPACITY.	◔	◕	◑
3. IN LOCATIONS WITH WASTEWATER CAPACITY DEFICIENCIES, SUPPORT SEWER HOOK-UP MORITORIA.	◔	◕	◑

ISSUE: III.2: MITIGATION OF GROWTH-RELATED AIR IMPACTS OF WASTEWATER MANAGEMENT FACILITIES

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT THE CURRENT (FEBRUARY, 1978) STATE AND FEDERAL POLICY ON RESTRICTING WASTEWATER FACILITIES CAPACITY.	◑	●	◕
2. SUPPORT ALTERNATIVE POLICIES IN 208 AND AQMP PLANNING.	○	◑	◑

FIGURE V-1 (Continued)

CODE FOR SUMMARY EVALUATION OF POLICY ALTERNATIVES

- ○ MAINLY ADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◔ MAINLY ADVANTAGES, BUT SOME DISADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ◑ MIXED ADVANTAGES AND DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◕ MAINLY DISADVANTAGES, BUT SOME ADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ● MAINLY DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION

ISSUE: III.6: ALTERNATIVE MANAGEMENT STRATEGIES FOR ON-SITE WASTEWATER TREATMENT AND DISPOSAL.

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. THE CHOICE OF ALTERNATIVE SYSTEMS IN RURAL AREAS SHOULD RELY ON DESIRES OF AFFECTED RESIDENTS AS MUCH AS POSSIBLE, CONSISTENT WITH HEALTH AND ENVIRONMENTAL CONSTRAINTS	◕	◔	◑
2. SUPPORT CONSTRUCTION OF CENTRALIZED SEWERAGE SYSTEMS IN RURAL AREAS WHEREVER GROUNDWATER QUALITY OR PUBLIC HEALTH COULD BE ADVERSELY AFFECTED.	◑	◑	◑
3. SUPPORT CONSTRUCTION OF CENTRALIZED SEWERAGE SYSTEMS IN RURAL AREAS, WHERE ALTERNATIVES ARE FEASIBLE, ONLY WHEN LACK OF SEWERS WILL CAUSE A GROUNDWATER PROBLEM OR HEALTH HAZARD. SUPPORT USE OF ON-SITE SYSTEMS AND FORMATION OF SEPTIC TANK MANAGEMENT ZONES WHERE PROPER SITING, DESIGN AND MAINTENANCE PRINCIPLES ARE FOLLOWED TO PROTECT GROUNDWATER QUALITY AND PUBLIC HEALTH.	◑	◔	◑

ISSUE: III.3: FEDERAL AND STATE DISCHARGE REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL DISCHARGES.

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT STRICT ENFORCEMENT OF DISCHARGE WHERE RESEARCH SHOWS DETRIMENTAL IMPACTS AND THAT ALTERNATIVES ARE LESS DETRIMENTAL.	◑	◑	◕
SUPPORT STRICT ENFORCEMENT OF DISCHARGE REQUIREMENTS FOR ALL DISCHARGES.	◔	◕	◔

ISSUE: IV.1: INTEGRATION OF WATER QUALITY GOALS IN RESIDUAL WASTE SYSTEMS PLANNING AND OPERATION

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT CURRENT CONSIDERATION OF WATER QUALITY GOALS IN RESIDUAL WASTE MANAGEMENT AS SUFFICIENT.	◕	○	◑
2. SUPPORT RESIDUAL WASTE MANAGEMENT STRATEGIES WHICH PROTECT WATER QUALITY AND PREVENT WATER QUALITY PROBLEMS.	○	◕	◑

ISSUE: III.4: LEVEL OF TREATMENT FOR WASTEWATER DISCHARGED TO THE OCEAN

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT TREATMENT LEVELS FOR MARINE DISCHARGES WHICH MAINTAIN EXISTING WATER QUALITY AND MARINE LIFE.	◕	○	◑
2. SUPPORT TREATMENT LEVELS FOR MARINE DISCHARGES WHICH PROTECT, ENHANCE AND RESTORE WATER QUALITY AND MARINE LIFE. CONSIDER WASTEWATER RECLAMATION AS AN ALTERNATIVE FOR MARINE DISCHARGE.	◑	◕	◑
CONSIDER WASTEWATER RECLAMATION AS A PREFERRED ALTERNATIVE TO MARINE DISCHARGES, UNLESS MARINE DISCHARGES CAN BE SHOWN TO BE PREFERABLE.	◔	◕	◕

ISSUE: IV.2: STRATEGIES FOR SLUDGE RESOURCE RECOVERY OR DISPOSAL

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT THE SLUDGE MANAGEMENT STRATEGY WITH THE LEAST CONSTRUCTION, OPERATION AND MAINTENANCE COSTS	●	◔	◑
2. SUPPORT THE SLUDGE MANAGEMENT STRATEGY WITH THE LEAST ENVIRONMENTAL, SOCIAL, ECONOMIC AND RESOURCE COSTS, CONSIDERED JOINTLY.	◑	◑	●
3. SUPPORT THE SLUDGE MANAGEMENT STRATEGY WHICH MINIMIZES ENVIRONMENTAL AND PUBLIC HEALTH RISKS.	○	◕	●

ISSUE: III.5: INDUSTRIAL PRETREATMENT PROGRAMS TO PREVENT ADVERSE EFFECTS OF POLLUTANTS

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT FLEXIBILITY OF MANAGEMENT AGENCIES TO CHOOSE AMONG VARIOUS PRETREATMENT PROGRAMS.	●	◔	○
SUPPORT PRETREATMENT PROGRAMS TO PREVENT TREATMENT PLANT INTERFERENCE AND TO MEET WATER QUALITY AND DISCHARGE STANDARDS. GENERALLY, DO NOT SUPPORT CHANGES UNTIL FURTHER ANALYZED IN 208 CONTINUING PLANNING, SUPPORT EFFORTS TO MANAGE PRETREATMENT SLUDGES	◔	●	◑
3. SUPPORT PRETREATMENT PROGRAMS TO PREVENT TREATMENT PLANT INTERFERENCE, TO MEET WATER QUALITY AND DISCHARGE STANDARDS, TO MINIMIZE SLUDGE CONTAMINATION, AND TO MINIMIZE THE POLLUTANTS PASSING THROUGH TREATMENT PLANTS. SUPPORT EFFORTS TO MANAGE PRETREATMENT SLUDGE.	◑	●	◑

ISSUE: IV.3: INTEGRATION OF WATER QUALITY GOALS IN STORMWATER SYSTEMS PLANNING AND OPERATIONS.

A. DEVELOPING AREAS

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT CURRENT STORMWATER SYSTEM PLANNING IN DEVELOPING AREAS AS SUFFICIENT.	●	◔	◔
2. SUPPORT MEASURES TO REDUCE RUNOFF VOLUME AND PEAK IN NEW DEVELOPMENT TO PREVENT WATER QUALITY PROBLEMS.	○	◑	◕

FIGURE V-1 (Continued)

CODE FOR SUMMARY EVALUATION OF POLICY ALTERNATIVES

- ○ MAINLY ADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◔ MAINLY ADVANTAGES, BUT SOME DISADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ◑ MIXED ADVANTAGES AND DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◕ MAINLY DISADVANTAGES, BUT SOME ADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ● MAINLY DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION

ISSUE: IV.3: INTEGRATION OF WATER QUALITY GOALS IN STORMWATER SYSTEMS PLANNING AND OPERATIONS.

B. DEVELOPED AREAS

	POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1.	SUPPORT OPERATIONAL CHANGES IN STORMWATER SYSTEMS MANAGEMENT IN DEVELOPED AREAS WHEN REQUIRED BY STATE OR FEDERAL LAW.	◑	●	◔
2.	SUPPORT OPERATIONAL CHANGES IN STORMWATER SYSTEMS MANAGEMENT IN DEVELOPED AREAS TO PROTECT WATER QUALITY.	○	●	◑
3.	SUPPORT OPERATIONAL CHANGES IN STORMWATER SYSTEMS MANAGEMENT IN DEVELOPED AREAS TO PROTECT WATER QUALITY AND TO REUSE STORMWATER TO THE MAXIMUM EXTENT POSSIBLE	○	◕	◕

ISSUE: V.1: INSTITUTIONAL, LEGAL, SOCIAL AND POLITICAL BARRIERS TO INCREASED REUSE OF MUNICIPAL WASTEWATER, INCLUDING EQUITY CONSIDERATIONS.

	POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1.	SUPPORT EXISTING INSTITUTIONAL, LEGAL AND FINANCIAL ARRANGEMENTS AS SUFFICIENT FOR WASTEWATER RECLAMATION	◔	◕	◔
2.	SUPPORT APPROPRIATE CHANGES IN INSTITUTIONAL, LEGAL AND FINANCIAL ARRANGEMENTS TO INCREASE THE AMOUNT OF WASTEWATER REUSED, CONSISTENT WITH PUBLIC HEALTH AND ENVIRONMENTAL CONSTRAINTS.	◔	◔	◑

ISSUE: V.2: MONITORING AND REGULATORY REQUIREMENTS FOR WASTEWATER RECLAMATION PROJECTS.

	POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1.	SUPPORT EXISTING MONITORING AND REGULATORY REQUIREMENTS AS SUFFICIENT FOR WASTEWATER RECLAMATION. SUPPORT INCREASED RESEARCH ON ENVIRONMENTAL AND HEALTH CONSTRAINTS.	●	◑	◑
2.	SUPPORT MODIFIED MONITORING AND REGULATORY REQUIREMENTS TO INCREASE THE AMOUNT OF WASTEWATER REUSED. SUPPORT INCREASED RESEARCH ON ENVIRONMENTAL AND HEALTH CONSTRAINTS.	◔	◑	◔

ISSUE: V.3: EMPHASIS ON WATER CONSERVATION AND RECLAMATION IN WASTEWATER FACILITIES AND WATER SUPPLY PLANNING.

	POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1.	SUPPORT CURRENT EMPHASIS ON CONSERVATION AND RECLAMATION AS SUFFICIENT	◔	◑	◑
2.	SUPPORT INCREASED EMPHASIS ON CONSERVATION AND RECLAMATION, CONSISTENT WITH PROTECTION OF WATER QUALITY AND PUBLIC HEALTH.	◑	◑	◑
3.	SUPPORT MAXIMUM CONSERVATION AND RECLAMATION, CONSISTENT WITH INSTREAM USES AND WATER QUALITY PROTECTION. SUPPORT WASTEWATER DISCHARGE TO THE MARINE ENVIRONMENT ONLY WHEN WASTEWATER RECLAMATION IS INFEASIBLE.	◑	◕	◑

ISSUE: VI.1: INSTITUTIONAL ARRANGEMENTS AND MANAGEMENT SYSTEMS FOR AREAWIDE WATER QUALITY MANAGEMENT.

A. MANAGEMENT SYSTEMS

	POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1.	IMPLEMENTATION OF 208 PLAN MEASURES SHOULD RELY PRIMARILY ON LOCAL GOVERNMENTS AND SPECIAL DISTRICTS. RESPONSIBILITY FOR COORDINATING 208 PLAN IMPLEMENTATION SHOULD BE AT THE AREAWIDE LEVEL	N/A	N/A	◑
2.	IMPLEMENTATION OF 208 PLAN MEASURES SHOULD RELY PRIMARILY ON LOCAL GOVERNMENTS AND SPECIAL DISTRICTS. RESPONSIBILITY FOR COORDINATING 208 PLAN IMPLEMENTATION SHOULD BE AT THE STATE LEVEL.	N/A	N/A	◑
3.	IMPLEMENTATION OF 208 PLAN MEASURES SHOULD RELY PRIMARILY ON A NEW AGENCY OR AGENCIES, CREATED BY A JOINT POWERS AGREEMENT AMONG EXISTING AGENCIES. RESPONSIBILITY FOR COORDINATING 208 PLAN IMPLEMENTATION SHOULD REST WITH THIS NEW AGENCY OR AGENCIES.	N/A	●	◑
4.	IMPLEMENTATION OF 208 PLAN MEASURES SHOULD RELY PRIMARILY ON THE AREAWIDE PLANNING AGENCY.	N/A	N/A	◑
5.	IMPLEMENTATION OF 208 PLAN MEASURES SHOULD RELY PRIMARILY ON STATE AGENCIES.	N/A	N/A	◑

ISSUE VI.1: INSTITUTIONAL ARRANGEMENTS AND MANAGEMENT SYSTEMS FOR AREAWIDE WATER QUALITY MANAGEMENT.

B. INSTITUTIONAL FRAMEWORK

	POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1.	SUPPORT THE CURRENT INSTITUTIONAL FRAMEWORK FOR WATER QUALITY MANAGEMENT.	N/A	◔	◑
2.	SUPPORT IMPROVEMENTS IN THE INSTITUTIONAL FRAMEWORK FOR WATER QUALITY MANAGEMENT, IN PARTICULAR THE COORDINATION OR CONSOLIDATION OF MANAGEMENT AGENCIES TO AVOID FRAGMENTATION OR DUPLICATION OF SERVICES.	○	◕	◑

ISSUE: VI.2: FINANCING AND NEEDED REGULATORY AUTHORITY FOR PLANNING AND IMPLEMENTATION OF BEST MANAGEMENT PRACTICES FOR NONPOINT SOURCE POLLUTION

A. FINANCING

	POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1.	NONPOINT SOURCE CONTROLS SHOULD BE FINANCED MAINLY THROUGH LOCAL SOURCES	N/A	◕	◑
2.	NONPOINT SOURCE CONTROLS SHOULD BE FINANCED THROUGH STATE AND FEDERAL GRANTS AS MUCH AS POSSIBLE. SEEK ADDITIONAL STATE AND FEDERAL FUNDING TO THIS END. LOCAL FUNDING ALTERNATIVES SHOULD BE INCLUDED FOR ALL NONPOINT SOURCE CONTROLS IN THE 208 PLAN AS A CONTINGENCY.	N/A	◑	◑
3.	NONPOINT SOURCE CONTROLS SHOULD BE FINANCED MAINLY THROUGH STATE AND FEDERAL GRANTS	◑	◑	◑

FIGURE V-1 (Continued)

CODE FOR SUMMARY EVALUATION OF POLICY ALTERNATIVES

- ○ MAINLY ADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◔ MAINLY ADVANTAGES, BUT SOME DISADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ◑ MIXED ADVANTAGES AND DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION
- ◕ MAINLY DISADVANTAGES, BUT SOME ADVANTAGES, FOR THE FACTOR UNDER CONSIDERATION
- ● MAINLY DISADVANTAGES FOR THE FACTOR UNDER CONSIDERATION

ISSUE: VI.4: EQUITABLE FINANCING MECHANISMS FOR MUNICIPAL WASTEWATER SYSTEMS (USER CHARGES, INDUSTRIAL COST RECOVERY).

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
1. SUPPORT THE FLEXIBILITY OF WASTEWATER MANAGEMENT AGENCIES TO CHOOSE AMONG VARIOUS FINANCING MECHANISMS.	N/A	◑	◔
2. SUPPORT CHANGES IN FINANCING MECHANISMS TO MOVE FURTHER TOWARDS THE "USER PAYS" PRINCIPLE. GENERALLY, DO NOT SUPPORT CHANGES UNTIL FURTHER ANALYSIS IN 208 CONTINUING PLANNING.	○	◔	◕
3. SUPPORT CHANGES IN FINANCING MECHANISMS NOW TO MOVE FURTHER TOWARDS THE "USER PAYS" PRINCIPLE.	○	◑	◕

ISSUE: VI.2. FINANCING AND NEEDED REGULATORY AUTHORITY FOR PLANNING AND IMPLEMENTATION OF BEST MANAGEMENT PRACTICES FOR NONPOINT SOURCE POLLUTION.

B. REGULATORY AUTHORITY

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
LOCAL IMPLEMENTATION OF NONPOINT SOURCE CONTROLS SHOULD RELY ON LOCAL REGULATION AS MUCH AS POSSIBLE.	N/A	◕	◑
LOCAL IMPLEMENTATION OF NONPOINT SOURCE CONTROLS SHOULD RELY ON LOCAL REGULATION AS MUCH AS POSSIBLE, AIDED BY AREAWIDE GUIDELINES.	○	○	◑
3. LOCAL IMPLEMENTATION OF NONPOINT SOURCE CONTROLS SHOULD RELY ON LOCAL RESPONSE TO STATE OR FEDERAL REGULATORY REQUIREMENTS	●	◑	◕

ISSUE: VI.5: ALLOCATION OF LIMITED STATE AND FEDERAL GRANTS FOR WASTEWATER TREATMENT FACILITIES TO THE REGION.

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT CURRENT METHODS FOR ALLOCATING STATE AND FEDERAL GRANTS FOR WASTEWATER TREATMENT.	◑	◑	◕
SUPPORT CHANGES IN FUNDING RESTRICTIONS SO THAT STATE POLICY IS CONSISTENT WITH 208 AND AQMP PLANS, AND SO THAT INCREASED GRANTS FOR WASTEWATER TREATMENT ARE ALLOCATED TO THE REGION.	N/A	○	◔

ISSUE: VI.3: COORDINATION OF WATER QUALITY RESEARCH AND MONITORING ACTIVITIES WITH WATER QUALITY MANAGEMENT PLANNING

POLICY ALTERNATIVES	ENVIRONMENTAL FACTORS	SOCIO-ECONOMIC FACTORS	INSTITUTIONAL/ POLITICAL FACTORS
SUPPORT CURRENT COORDINATION BETWEEN RESEARCH AND MONITORING PLANNING.	N/A	N/A	◑
SUPPORT AN IMPROVED INSTITUTIONAL FRAMEWORK FOR WATER QUALITY RESEARCH AND MONITORING.	N/A	◕	◑

Alternative Action 1/2b: Improvement by each subregional agency of existing activities with regard to cleanup and containment of spills of hazardous substances.

This alternative would result in improvements to the existing hazardous substance spill activities of each federal, state, and local agency, on an individual basis, in the South Coast area. The adverse environmental effects of this alternative would be similar to those described for the proposed action, since each agency is assumed capable of minimizing environmental effects of spills within its response area. Coordination of the spill response activities of these agencies would not be improved, however, and the potential for duplication of effort and conflicting response activities would be increased. Economic costs of this alternative would be greater than those identified for the proposed action. Beneficial impacts of this alternative would be fewer than those identified for the proposed action. Improved review and documentation of individual agency spill response activities would not occur, and the potential risk from spills might not be reduced. This alternative was therefore rejected since it does not minimize duplication of efforts and costs and does not result in a potential reduction of the risks from hazardous substance spills.

URBAN NONPOINT SOURCE WASTES

Proposed Action 3: Existing street sweeping programs (prior to passage of Proposition 13) should be continued with consideration given to increasing their effectiveness in reducing wasteloads to receiving waters.

Alternative Action 3a: Improve the effectiveness of existing street-sweeping practices.

This alternative would require local agencies to upgrade their present street-sweeping practices. Although greatly increased quantities of collected street wastes would result from this alternative, the degree of water quality improvement cannot be estimated. To make such an estimate, the potential incremental increase in collected wastes would have to be obtained. Since agencies in the South Coast Planning Area do not measure street wastes collected uniformly, increased waste collections cannot be estimated at this time. The increased costs to local agencies could not be justified without first knowing the potential water quality improvements that would result. This alternative was therefore rejected from consideration due to cost considerations and potential nonavailability of local funds due to passage of Proposition 13.

Alternative Action 3b: No-action alternative.

The no-action alternative would result in the elimination of local street-sweeping programs. Although cost savings would result, the public health and water quality benefits that now result from existing street-sweeping programs would be lost. This alternative was therefore rejected as infeasible, due to the potentially adverse public health impacts that would occur.

Proposed Action 4: Maintain current litter control programs.

Alternative Action 4a: Improve current litter control programs.

This alternative would result in increased litter control activities for local agencies. Beneficial visual and public health impacts in excess of those resulting from the proposed action would result. Some water quality improvement over the proposed action could occur, but its magnitude is indeterminable. Increased local costs would occur as a result of this alternative and its cost-effectiveness cannot be demonstrated at this time. This alternative was therefore rejected from further consideration.

Alternative Action 4b: No-action alternative.

Existing litter control programs of local agencies would be eliminated under this action. Public health benefits associated with the proposed action would not be realized and potentially negative public health impacts could occur. Although costs to local agencies would be reduced, these could be offset by increased public health costs. This alternative was judged infeasible, due to potentially adverse public health considerations.

URBAN AND INDUSTRIAL STORMWATER SYSTEM NEEDS

Proposed Action 5: Maintain current catch basin, inlet basin and storm drain cleaning programs with consideration given to increasing the effectiveness of these programs.

Alternative Action 5a: Improve current catchbasin and storm drain cleaning programs.

This action would result in improved catchbasin and storm drain cleaning programs. Improved stormwater system efficiency with attendant reduction of flood risk and water quality benefits would result, as compared to the proposed action. This alternative would result in increased costs to local agencies and ultimately to taxpayers and would defer monies from other public agency programs. This alternative was rejected from further consideration because of its indeterminate cost-effectivess and the recognition of local funding reductions resulting from the passage of Proposition 13.

Alternative Action 5b: No-action alternative.

This alternative would result in the elimination of existing catchbasin and storm drain cleaning operations. Beneficial impacts of the proposed action relating to improved stormwater system effectiveness, reduced flood risks, and water quality improvements would be eliminated. Although local agency costs would be lessened, public welfare impacts and flood damages could potentially offset the cost savings. This alternative was therefore judged infeasible.

Proposed Action 6: Emphasize reduction of runoff volume and peak flow rates as mitigation measures in environmental impact reports (EIR's) for new development.

Alternative Action 6a: Require developers to reduce runoff volume and peak flow rates in new developments.

This alternative would require new developments to incorporate runoff volume reduction and peak flow rate measures. Beneficial impacts described for the proposed action would be realized and possibly increased. The adverse impacts would also be realized. Additionally, developers would be required to incorporate measures into new developments without prior demonstration of their cost-effectiveness. Increased housing costs could result that might be offset by reduced costs of providing additional stormwater systems by public agencies. This alternative was rejected because its costs-effectiveness could not be demonstrated.

Alternative Action 6b: Continue existing design practices in new developments.

This alternative would result in a continuation of the status quo. Beneficial impacts described for the proposed action would not be realized. Potential for ground water recharge would be reduced under this alternative, and soil erosion and associated water quality impairment that occurs after completion of construction would continue. Adverse impacts described for the proposed action would not be realized. The costs of providing additional drainage and flood control protection

would not be borne by the developer as described for the proposed action, but would continue to be financed by the general public through property taxes. This alternative was rejected because it did not provide for water quality and water supply benefits and prevented equitable allocation of costs resulting from private development.

CONSTRUCTION ACTIVITIES

Proposed Action 7: Strengthen existing erosion and grading control ordinance by (1) adopting specific ordinances for areas requiring water quality control, which are to be at least as effective as the Model Erosion and Sedimentation Control Measures for Grading Ordinances guidelines in Appendix B of the draft 208 Plan or (2) adopting the Model Erosion Control Ordinance contained in Appendix C of the draft 208 Plan.

Proposed Action 8: Stringently enforce erosion and grading control ordinances in areas identified in Table IV-3.

Since these two actions are complementary and were assessed simultaneously in Section III of the EIR due to similarity of effects, they are also assessed as a single action here.

Alternative Action 7/8a: Maintain existing levels of enforcement of erosion and grading controls in hillside areas using existing ordinances.

This alternative would continue the status quo. Beneficial water quality and public welfare impacts described for the proposed actions would not be realized. Erosion and soil losses presently experienced would continue. Costs to local governments could increase from cleanup activities resulting from erosion and landsliding in developing areas. Adverse impacts described for the proposed action would not occur under this alternative. This alternative is judged infeasible since federal law (Public Law 92-500) requires that all nonpoint sources of pollution be brought under control to meet the 1983 goals of the Act. Additionally, accelerated erosion and landsliding that occurred during the past rainy season has highlighted the deficiencies in enforcement of local grading ordinances, and public concern requires that improvements be made.

Alternative Action 7/8b: Reduce existing levels of enforcement of erosion and grading controls in hillside areas using existing ordinances.

This alternative would reduce the enforcement activities for erosion and grading in hillside areas. The beneficial and negative impacts identified for the proposed action would not be realized. Additionally, current levels of erosion from hillside developments would increase, as would the potential landslide hazards in these areas. Costs to local governments would be reduced by cutting back enforcement activities, but these costs might be offset by increased erosion cleanup operations. Costs of housing potentially could be reduced if cost savings realized by developers were passed on to consumers of new housing. This alternative was rejected because of the increased potential for erosion and 208 Plan requirements that call for control of nonpoint sources of pollution.

Proposed Action 9: Distribute homeowner's guides for new developments containing information on erosion control and prevention of landsliding.

Alternative Action 9a: No-action alternative.

This alternative would continue the status quo. Beneficial impacts described for the proposed action would not be realized. Adverse effects described for the proposed action, mostly media and distribution costs, would not occur. Homeowners would continue to purchase homes in hillside areas without having information available to them describing the potential hazards and how their activities may reduce these hazards. Increased costs to local agencies could result due to increased cleanup activities from erosion and landslide incidents. This alternative is judged infeasible in light of 208 Plan requirements and potentially increased hazards to life and property in hillside areas.

Proposed Action 10: Conduct special education and training programs in erosion and sediment control application for the construction industry and local governments.

Alternative Action 10a: No-action alternative.

This alternative would continue the status quo. Construction industry and local government personnel would continue to use development techniques that do not reflect recent information on erosion and sediment control prepared by state and federal agencies. The beneficial effects identified for the proposed action would not be realized. Adverse effects of the proposed action, mostly training costs, would not occur. However, increased costs to local governments and the general public could occur from cleanup activities. This alternative was judged infeasible in light of 208 Plan requirements for controlling nonpoint pollution sources and the potentially major costs to the public from sediment cleanup and water quality impairment.

AGRICULTURAL PRACTICES

Proposed Action 11: Develop and adopt an ordinance that requires Resource Conservation Plans for all areas in agricultural use.

Alternative Action 11a: No-action alternative.

This alternative would continue the status quo. Beneficial and adverse impacts described for the proposed action would not occur. The present system of preparing Resource Conservation Plans only at the request of the farmer would continue. Approximately one third of the agricultural area in the planning area is not under a conservation plan. Sediment losses and water quality impairment from agricultural tailwater could continue. Farm resources, such as fertilizer and water, could potentially be misused, resulting in higher costs to farmers and higher prices for consumers. In light of 208 Plan requirements for control of nonpoint sources of pollution and the potential losses of soil from erosion and decreased agricultural productivity, this alternative was rejected from further consideration.

Alternative Action 11b: Conduct outreach programs to inform farmers of the necessity for developing and implementing Resource Conservation Plans for all areas in agricultural use.

This action would improve the effectiveness of the existing system, in which conservation plans are prepared only upon request. The beneficial and adverse impacts identified for the proposed action might be partially or totally realized. Reduced costs to local governments (counties) would result from removing the need to develop and enforce an ordinance requiring conservation plans. The 208 Plan requirements potentially could be met, but achieving conservation plans for all agricultural areas would require a much longer period. The experience of Resource Conservation District personnel with programs of this nature indicates that voluntary programs are only partly successful. This alternative was rejected in light of experience which indicated that relatively little water quality improvement would result from increased emphasis on voluntary programs.

Proposed Action 12: Expand Resource Conservation Plans to be consistent with 208 Plan Best Management Practices for agriculture.

Alternative Action 12a: No-action alternative.

This alternative would continue the status quo. The beneficial and adverse effects identified for the proposed action would not be realized. Consistency between Best Management Practices (BMP) recommended in the draft 208 Plan and the management practices required by Resource Conservation Plans would not be achieved. Potential for water quality impairment and soil losses from use of outdated management practices would be increased. The 208 Plan requirements for consistency between agricultural activities and the 208 Plan would not be achieved and might result in the loss of agricultural cost-sharing money authorized by Section 208(j)(1) of the Clean Water Act of 1977. This alternative was therefore rejected.

Alternative Action 12b: Distribute 208 Plan Best Management Practices to all Resource Conservation Districts and farmers and request that they be applied.

This alternative would request Resource Conservation Districts and farmers to voluntarily apply the 208 Plan Best Management Practices. The beneficial impacts described for the proposed action could be realized, but over a longer time period. Adverse effects identified for the proposed action could also be partially or totally realized. Increased costs to farmers could result if the 208 Plan BMP were not specifically tailored to each farm. The farmer would probably seek assistance from the Conservation District or Soil Conservation Service personnel, increasing staff costs. As previously mentioned, voluntary programs of this type have generally lacked effectiveness. This alternative was therefore rejected in light of 208 Plan requirements for controlling nonpoint source pollution and the potential loss of agricultural cost-sharing money authorized by Section 208(j)(1) of the Clean Water Act of 1977 that might result from advocating voluntary consistency programs.

Proposed Action 13: Develop long-range Best Management Practices and implementation strategies for Dairy Wastes in the Chino Valley.

Alternative actions have not been identified since the proposed action refers to a planning study and does not include provisions for implementation.

SALINE WATER INTRUSION

Proposed Action 14: Maintain existing management programs for control of saline water intrusion.

Alternative Action 14a: Improve the effectiveness of existing management programs for control of saline water intrusion.

This action would improve the effectiveness of existing saline intrusion management programs. Barrier projects could be expanded or upgraded with improved technology. Beneficial impacts to water quality would occur, but only with increased costs. The operating experience of local barrier management agencies indicates that existing programs are adequate. Based on this consideration, this alternative was rejected as not being cost-effective.

Alternative Action 14b: Reduce existing management programs for control of saline water intrusion.

This alternative would cut back the saline intrusion barrier projects in operation in coastal areas of the South Coast 208 planning area. Additional intrusion of seawater into ground water basins would occur, resulting in adverse water quality impacts and potential loss of some potable water supplies. Increased costs to residents of the region for replacing the degraded waters through importation or increased reclamation would occur. This alternative would be inconsistent with 208 Plan requirements and prudent water management and was therefore rejected.

CONSISTENCY OF WASTEWATER FACILITIES WITH AREAWIDE GROWTH FORECAST

Proposed Action 15: Plan, design, and construct the municipal facilities necessary to meet the municipal water treatment system needs shown in the 1978/1979 SWRCB Clean Water Grant Project Priority List consistent with the wastewater flow forecast shown in Table IV-6A.

Alternative Action 15a: Plan, design, and construct the municipal facilities necessary to meet the municipal waste treatment system needs shown in the 1978/1979 SWRCB Clean Water Grant Project Priority List consistent with the capacity needs associated with the state-prepared E-150 forecast.

This alternative would result in the construction of additional treatment plants or plant expansions in the South Coast area, since the draft SCAG-78 growth forecast reflects less population growth for this area than does the state's E-150 forecast. The adverse impacts of this alternative would be greater than those described for the proposed action. The beneficial impacts of this alternative would be similar in magnitude to those described for the proposed action. The use of the state E-150 forecast for determining needed treatment plant capacity would, however, conflict with the air quality management plan (AQMP) developed for this region which is based upon the SCAG-78 growth forecast. Consistency between the AQMP and 208 Plan would not be achieved, and potential loss of Clean Water Grant funds might result. This alternative was therefore rejected from further consideration.

Proposed Action 16: Prepare the 1979-1980 Clean Water Grant Project Priority List to provide for funding of the municipal facilities in the South Coast Planning area on a schedule consistent with the wastewater flow forecast shown in Table IV-6A and the dates indicated on Table IV-6B.

Alternative Action 16a: No-action alternative.

This alternative would continue the status quo. The SWRCB prepares the priority list based, in part, on the recommendations of the Regional Water Quality Control Boards. These priorities may not necessarily provide for facilities capacity when it is needed (i.e., prior to reaching capacity or prior to violation of standards). Beneficial and adverse impacts of this alternative are indeterminate as compared to those described for the proposed action. This alternative was rejected because it was felt that scheduling capacity needs consistent with projected populations provided for a more effective areawide priority setting process.

Proposed Action 17: Revise NPDES permits to ensure that permitted wastewater flows are consistent with the flows shown in Table IV-6A for the time period of the permit.

Alternative Action 17a: No-action alternative.

This alternative would not provide consistency between treatment plant flows, as stated in NPDES permits, and wastewater flows anticipated from future growth. The overall effect of nonconsistency could result in encouraging growth to occur at a faster rate than projected by the SCAG-78 growth forecast. This accelerated growth could result in treatment plant capacities being reached sooner

than anticipated, with potential violations of standards. Additionally, local services might be over-extended, resulting in additional costs to local governments. This alternative was rejected from further consideration because it was felt that coordination and consistency between allowable flows and anticipated growth would benefit water quality and provide additional environmental benefits to the region.

WASTEWATER FACILITIES PLANNING AND AIR QUALITY MANAGEMENT COORDINATION

Proposed Action 18: Plan, design, and construct wastewater facilities consistent with the Air Quality Management Plan.

Proposed Action 19: Assist in the implementation of the Air Quality Management Plan.

Alternative Action 18/19a: No-action alternative.

This action would continue the status quo. At this time, wastewater treatment facilities are only planned consistent with growth forecasts. Federal and state laws require the preparation of an air quality management plan (AQMP) to meet standards by 1987. If standards cannot be met by that date through implementation of the AQMP, loss of federal Clean Water Grant funds to this region would occur. In light of this requirement, the no-action alternative was judged infeasible.

Proposed Action 20: In the preparation of Environmental Impact Reports and Statements (EIRs/EISs) for municipal wastewater facilities, specify as mitigation measures for air quality impacts those tactics and strategies adopted as part of the Air Quality Management Plan.

Alternative Action 20a: No-action alternative.

This action would continue the status quo. At present, wastewater agencies develop mitigation measures for air quality impacts independently, on a case-by-case basis. This alternative would result in fewer beneficial impacts than those described for the proposed action. Potential for duplication of efforts and specification of ineffective mitigation measures would exist. Coordination between the AQMP and wastewater agencies would not be assured, and delays in review and approval of EIR/EISs by funding agencies and the general public could occur. This alternative was rejected because it was felt that the tactics and strategies contained in the AQMP represent a state-of-the-art listing of mitigation measures that should be used by wastewater agencies to mitigate air quality impacts and achieve consistency with the AQMP, as required by federal 208 Plan and AQMP requirements.

UNSEWERED AREAS

Proposed Action 21: Plan, design, and construct package treatment plants for beachfront Malibu and part of the Malibu Civic Center area.

Alternative Action 21a: No-action alternative.

This alternative would continue the status quo. Septic tanks in this area show a very high rate of failure. Beneficial public health and water quality impacts described for the proposed action would not occur. Adverse impacts related to the construction of the package treatment plants would also not occur. Potential for increased ground water and surface water contamination would exist under this alternative. Further consideration of this alternative was rejected based upon the public health and water quality concerns resulting from the failure of septic tanks in this area.

Proposed Action 21b: Plan, design, and construct a single, centralized treatment plant to service beachfront Malibu and part of the Malibu Civic Center area.

This alternative would result in the construction of a single treatment plant for the Malibu area. Beneficial impacts would be similar to those described for the proposed action. Adverse impacts, primarily construction-related, for this alternative would be similar to those described for the proposed action, but would be confined to a single location. Costs for construction could be higher if the single plant was not considered to employ innovative technology and therefore not eligible for 87.5 percent federal funding. A similar proposal was advanced for this area several years ago and was rejected by local residents. In view of this fact, this alternative was rejected from further consideration.

Proposed Action 22: Create onsite Waste Water Management Zones in the Malibu/Topanga Area pursuant to the Behr Bill (SB-430).

Proposed Action 23: Develop and implement septic tank management approaches for each onsite waste management zone.

Alternative Action 22/23a: No-action alternative.

This alternative would continue the status quo. Mechanisms for maintaining septic tank systems in this area do not presently exist. A high failure rate for septic tanks exists in the area. The beneficial water quality and public health impacts described for the proposed action would not be realized. The adverse impacts of septic tank pumping and septage transport described for the proposed action would also not occur. Continuation of the status quo would result in additional septic tank failure in future years with an increased potential for ground water and surface water quality impairment and potentially negative public health impacts. For these reasons, and in recognition of 208 Plan requirements for controlling nonpoint sources of pollution, this alternative was rejected.

Alternative Action 22/23b: Develop an information program to inform owners of septic tanks of the water quality and public health consequences of failing septic tanks and request pumpout every two years.

This alternative could result in increased public awareness of the public health and water quality impacts of failing septic tanks. Soliciting the voluntary compliance of homeowners for pumping septic tanks every two years could result in beneficial impacts similar to those described for the proposed action. The degree of beneficial impact would depend on the degree of compliance. The adverse septic tank maintenance impacts of this alternative would be similar to those described for the proposed action but would be of a lesser magnitude, due to voluntary rather than mandatory compliance. Costs of this alternative would be lower than those of the proposed action. Septic tank failures could continue to occur, however, since some homeowners might not voluntarily incur the expense of periodic pumping. In light of its questionable effectiveness and 208 Plan requirements for control of nonpoint sources of pollution, it was felt that the proposed action was the preferable approach to reducing the public health and water quality problems from septic tanks in this area.

Proposed Action 24: Revise the Fiscal Year 1978-79 Clean Water Grant Project Priority for the Malibu Area Wastewater facilities.

Alternative Action 24a: No-action alternative.

This alternative would result in no change to the existing project priority listing for the Malibu area. This alternative was rejected because Proposed Action 21 is a different project than the one now listed on the priority list, and the listing would have to be changed if Proposed Action 21 is to be undertaken. This alternative was therefore judged infeasible.

WATER CONSERVATION AND REUSE

STORMWATER CONSERVATION

Proposed Action 25: Maintain existing stormwater conservation programs.

Alternative Action 25a: Improve existing stormwater conservation programs.

This alternative would result in expansion of the existing stormwater conservation and ground water replenishment activities of local flood control districts and water agencies in the South Coast 208 area. Additional water supply and water quality benefits could result from this alternative, as compared to the proposed alternative. Adverse impacts would relate primarily to increased construction, operations, and maintenance costs for additional spreading activities. Although improvements to these conservation programs would result in increased water supply benefits to the region, this alternative was rejected from further consideration in recognition of the pending cutbacks in local agency funds resulting from the passage of Proposition 13 by California voters in June 1978.

Alternative Action 25b: Reduce existing stormwater conservation programs.

This action would result in a reduction in the volume of stormwater conserved for use in the South Coast area. Adverse water supply impacts would result since additional water supplies might have to be imported to the region at higher costs to consumers. Given the arid climate of this region and the delicate balance that exists between available water supplies and demand for water, this alternative was rejected from further consideration.

WASTEWATER RECLAMATION AND REUSE

Proposed Action 26: Develop a long-range plan and implementation strategy to increase wastewater reuse in Los Angeles and Orange Counties through the Los Angeles/Orange Counties regional reuse study.

Proposed Action 27: Adopt the 208 Plan water conservation and reuse policies as the policy framework for the Los Angeles/Orange County Reuse Study.

No alternatives were considered for these actions because they reference the preparation of a plan being undertaken by the Regional Reuse Study.

RESIDUAL WASTE MANAGEMENT

WASTEWATER SLUDGE MANAGEMENT

Proposed Action 28: Develop a long-range wastewater sludge management plan and implementation strategy for the Los Angeles/Orange County Metropolitan Area (LA/OMA Project).

No alternatives were considered for this action since it references a plan currently being prepared by the LA/OMA Project.

OTHER SOLID AND NONSEWERABLE LIQUID WASTES

Proposed Action 29: Develop and implement a strategy for permanently closing the Stringfellow Class I Hazardous Waste Disposal Site.

Alternative Action 29a: No-action alternative.

This alternative would continue the status quo. The Stringfellow site was closed in 1972 due to contamination of ground water supplies from leakage of hazardous wastes. Beneficial public health and ground water quality impacts described for the proposed action would not occur. Adverse ground water and surface water impacts, particularly during rainy periods, would continue to occur. Costs for pumping out contaminated impounded surface water on the site would continue to be borne by the state. Due to the significant water quality problems caused by the present status of the site, and 208 Plan requirements for controlling nonpoint sources of pollution, this alternative was rejected.

Proposed Action 29b: Seek funds from the State Legislature to permanently close the Stringfellow Class I Hazardous Waste Disposal site.

This alternative would seek funds from the state to close the Stringfellow site permanently and prevent further ground water and surface water contamination. Estimated dollar costs for closing the site range from $200,000 to $4 million, depending on the closure option selected. The beneficial and adverse impacts described for the proposed action would be realized if this alternative were implemented. This alternative was rejected after it was learned (in September 1978) that a proposal for state funding to close the site has been submitted to the legislature with little chance of approval.

Proposed Action 30: Suspend the granting of waste-disposal permit exemptions by local solid waste enforcement agencies for Class III landfills.

Proposed Action 31: Require ground water quality monitoring and other monitoring program improvements at Class III sanitary landfills.

Alternative Action 30/31a: No-action alternative.

This alternative would result in the continuation of the status quo. The California Administrative Code provides that Class III landfills may be exempted from the local solid waste permits required for Class I and II landfills. Granting these exemptions would result in decreased monitoring and inspection that could, in turn, result in ground water quality impairment if Group I or II materials

were deposited. Additionally, ground water quality monitoring is not presently required at Class III sites, since presumably only Group III wastes are deposited. The beneficial impacts described for the proposed action would not be realized if this alternative were implemented. Adverse effects of this alternative are the potential for discharge of illegal materials to Class III landfills and potential ground water quality impairment that could not be detected under existing monitoring programs. This alternative was rejected from further consideration based upon the potential for ground water quality impairment and 208 Plan requirements for control of nonpoint sources of pollution.

INTEGRATED CONTROL PLANS–PRIORITY PROGRAM FOR NEWPORT BAY

HABITAT RESTORATION

Proposed Action 32: The California Department of Fish and Game has commenced implementation of the Pilot Marsh Restoration Project (PMRP). This project shall be completed by January 1980. The estimated cost for this project is $540,000. Funds shall be provided by the state and shall be administered by the Department of Fish and Game.

Proposed Action 33: On completion of the PMRP the Department of Fish and Game shall establish a Protected Experimental Habitat (PEH) at a cost of approximately $2.5 million (1978).

Alternative Action 32/33a: No-action alternative.

This action would continue the status quo. The Pilot Marsh Restoration Project (PMRP) is being implemented by California Department of Fish and Game to re-establish a wetlands habitat in upper Newport Bay and is scheduled for completion in early 1980. Once completed, however, the establishment of a Protected Experimental Habitat (PEH) to investigate the functioning of salt marsh ecosystems and recommend approaches to manage this area would not be undertaken. Beneficial and adverse impacts described for the proposed project from the PMRP would be realized; beneficial and adverse impacts described for the PEH in the proposed action would not be realized. Additional understanding of the dynamic salt marsh ecosystem would not be gained, with the potential result that effective management of the salt marsh after its restoration might not occur. The overall success of the PMRP could be impaired. This alternative was rejected because it was felt that proper management of the public funds already committed to the Pilot Marsh Restoration Project required effective management of the salt marsh after restoration was completed.

Other Alternatives Considered

During the development of the proposed action alternative schedules, funding levels and sources, and alternative approaches to effective salt marsh management were discussed. Detailed studies that provided the framework for these discussions were conducted by consultants to NIWA. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans – Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B Subtask 1 Report: Further Habitat Restoration and Dredging Operations, Newport-Irvine Waste Management Planning Agency, SCAG 208-38a, October 1978.

Proposed Action 34: On completion of the PMRP the Department of Fish and Game shall improve the lower portion of the Upper Bay to enhance wildlife habitat, increase circulation, and decrease stagnation.

Alternative Action 34a: No-action alternative.

This alternative would continue the status quo. The lower portion of the Upper Bay would continue to suffer from poor circulation and stagnation due to sediment buildup in the channel between North Island and the bank. The beneficial impacts described for the proposed action would not be realized; the adverse impacts described for the proposed dredging would also not be realized. The restoration of the Upper Newport Bay Ecological Reserve could be impaired. Since the California Department of Fish and Game administers the ecological reserve and is committed to restoring the estuary to a productive state, this alternative was rejected.

Other Alternatives Considered

As the proposed action was being developed, alternative approaches to restoration of the Upper Bay, funding levels and sources, and alternative implementation schedules were discussed. Detailed studies that provided the framework for these discussions were conducted by consultants to NIWA. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans – Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B Subtask 1 Report: Further Habitat Restoration and Dredging Operations, Newport-Irvine Waste Management Planning Agency, SCAG 208-38a, October 1978.

Proposed Action 35: On completion of the PMRP the Department of Fish and Game shall, when sufficient data is available from the PEH or PMRP, improve the salt pan and subtidal areas. The schedule for attaining the final configuration is 10 to 20 years and the anticipated cost is approximately $10 million (1978). Funding shall be provided by state, federal, and/or other funding sources and administered by the Department of Fish and Game.

Alternative Action 35a: No-action alternative.

This alternative would continue the status quo in upper Newport Bay. The PMRP would be completed and the PEH would be designated. Improvement of the salt pan and sub-tidal areas, would not occur. Beneficial impacts described for the proposed action would not be realized, and adverse impacts described for the proposed action would not occur. Restoration of Upper Newport Bay would not be completed, and the knowledge obtained from restoration work accomplished under the PMRP and the PEH would not be used. Since the California Department of Fish and Game is committed to restoring the estuary and ecological reserve to a productive state, this alternative was rejected.

Other Alternatives Considered

Alternative approaches to restoration of the Upper Bay were investigated as the proposed action was being formulated. Variations on scheduling, funding sources and levels, and agency responsibilities were discussed. Detailed studies that provided the framework for these discussions were conducted by consultants to NIWA. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans – Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B Subtask 1 Report: Further Habitat Restoration and Dredging Operations, Newport-Irvine Waste Management Planning Agency, SCAG 208-38a, October 1978.

Proposed Action 36: The California Department of Fish and Game, with assistance provided by the CEMA, UCI, and other monitoring agencies, shall assess the efficiency of upstream sediment controls and develop a program for management of sediment reaching the Bay. The anticipated yearly cost of this program is estimated to be $200,000 (1978) per year. Funding for this program shall be provided by federal, state, or other sources and administered by the Department of Fish and Game.

Alternative Action 36a: No-action alternative.

This alternative would continue the status quo. The amounts and nature of sediments transported during rainstorms to Newport Bay would remain unknown as would the effectiveness of upstream sediment controls whose purpose is to control sediment transport. The beneficial impacts described for the proposed action would not be realized. The adverse impacts described for the proposed action would not occur. Managing the sediment that reached the Bay would be difficult and of limited effectiveness. This alternative would effectively constrain a comprehensive management approach for protecting the ecological reserve, and was therefore rejected.

Other Alternatives Considered

Alternative time schedules, monitoring activities, and funding levels were discussed during the development of the proposed action. Detailed studies that provided the framework for these discussions were conducted by consultants to NIWA. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans – Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B Subtask 1 Report: Further Habitat Restoration and Dredging Operations, Newport-Irvine Waste Management Planning Agency, SCAG 208-38a, October 1978.

SEDIMENT AND EROSION CONTROL

Proposed Action 37: Each appropriate jurisdiction within the Newport Bay watershed shall finance the development, adoption, and enforcement of a grading ordinance or regulation for those portions of its area in the Newport Bay watershed. These ordinances or regulations shall be at least as stringent as the SCAG areawide model grading ordinance as amended by NIWA, and shall be implemented within six months of the adoption of the 208 Plan.

Alternative Action 37a: No-action alternative.

This alternative would continue the status quo in the Newport Bay watershed. The grading ordinances of local agencies in the watershed vary in the restrictiveness of their provisions and degree of enforcement. The beneficial impacts of this alternative would be less than those described for the proposed

alternative. Adverse impacts described for the proposed action (mostly increased costs to local governments) would not be realized. The commitment of local agencies in the Newport Bay watershed to restoration of the Bay was the primary factor in the rejection of this alternative.

Other Alternatives Considered

During the development of the proposed action, the grading ordinances of local agencies were evaluated and alternative erosion control ordinances were considered. Detailed studies that provided the framework for these evaluations were conducted by consultants to NIWA. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B: Subtask 3 Report: Erosion and Grading Controls, Newport-Irvine Waste Management Planning Agency, 208-38c, October 1978.

Proposed Action 38: **The Regional Water Quality Control Board will set objectives for sediment discharge from agricultural lands and the Orange County Resource Conservation District shall develop and promote adoption of Best Management Practices (BMPs) for the reduction of erosion consistent with these objectives. The Orange County Environmental Management Agency shall design and maintain its flood protection facilities to minimize sediment transport from sheet erosion of agricultural fields. (condensed wording)**

Alternative Action 38a: No-action alternative.

This alternative would continue the status quo. Beneficial water quality impacts described for the proposed action would not be realized. Adverse impacts (mostly costs to farmers and local agencies for enforcement) would not occur. Sediment discharges from agricultural lands would continue and the implementation of Best Management Practices to control these discharges would continue to be voluntary. The commitment of local agencies in the Newport Bay watershed to the restoration of the Bay was the primary factor in rejecting this alternative.

Other Alternatives Considered

During the development of the proposed action, alternatives for controlling sediment discharges from agricultural lands were considered and enforcement activities were discussed. Detailed studies that provided the framework for these discussions were conducted by consultants to NIWA. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Mangement Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B: Subtask 3 Report: Erosion and Grading Controls, Newport-Irvine Waste Management Planning Agency, 208-38c, October 1978.

Proposed Action 39: **The Orange County Environmental Management Agency shall, where proven reasonably practicable, provide dams for sediment and flow retention in the Lomas de Santiago. (condensed wording)**

Alternative Action 39a: No-action alternative.

This alternative would continue the status quo in the Newport Bay watershed. Beneficial impacts, mostly reduced sediment transport, described for the proposed action would not be realized. Adverse impacts described for the proposed action, mostly impacts on riparian communities and increased costs, would not occur. It is estimated that 30 percent of the total sediment load reaching Newport Bay is contributed by this foothill area. The commitment of local agencies in the Newport Bay watershed to restoration of the Bay was the primary factor for rejection of this alternative.

Other Alternatives Considered

Other alternatives to the proposed action were considered, including number, type, and location of debris dams, and alternative facility designs. Geotechnical investigations and environmental assessments were also conducted by consultants to NIWA in support of development of the proposed action. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.

2. Appendix, NIWA Task 2-1B: Subtask 5 Report: San Diego Creek Watershed Erosion and Stormwater Sediment Delivery Control System, Newport-Irvine Waste Management Planning Agency, 208-38e, October 1978.

Proposed Action 40: Stabilize flood control channels in the San Diego Creek system. (condensed wording)

Alternative Action 40a: No-action alternative.

This alternative would continue the status quo in the San Diego Creek flood control system. Beneficial impacts to water quality in Newport Bay described for the proposed action would not be realized. Adverse impacts described for the proposed action would not occur. Since this alternative would result in sediment from unstabilized flood control channels reaching Newport Bay, it was rejected from further consideration. This decision was based on the commitment of local agencies in the Newport Bay watershed to the restoration of the Bay.

Other Alternatives Considered

During the development of the proposed action, alternative sediment control measures, including alternative channel designs and locations, were considered. Detailed studies were conducted by consultants to NIWA that provided the framework for the evaluation. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.

2. Appendix, NIWA Task 2-1B: Subtast 5 Report: San Diego Creek Watershed Erosion and Stormwater Sediment Delivery Control System, Newport-Irvine Waste Management Planning Agency, 208-38e, October 1978.

Proposed Action 41: Upstream improvements and administrative controls may not adequately control all of the sediments transported from the watershed. Therefore, the reach of San Diego Creek from Jamboree Road to the San Diego Freeway shall be maintained in such a manner as to maximize its erosion control potential consistent with its intended purpose of flood control protection.

Alternative Action 41a: No-action alternative.

This action would continue the status quo in Newport Bay. Beneficial impacts, mostly reduced sediment transport to the Bay, described for the proposed action would not be realized. Adverse impacts described for the proposed action, mostly increased costs, would not occur. The commitment of local agencies in the Newport Bay watershed was the primary factor in rejection of this alternative;

Other Alternatives Considered

During the development of the proposed action, alternatives for reducing sediment transport, alternative locations, and timing of control measures were considred. Detailed studies were conducted by consultants to NIWA that provided the framework for the evaluation. The following reports are incorporated herein by reference as documentation of alternatives for the proposed action:

1. Integrated Control Plans – Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B: Subtask 5 Report: San Diego Creek Watershed Erosion and Stormwater Sediment Delivery Control System, Newport-Irvine Waste Management Planning Agency, 208-38e, October 1978.

Proposed Action 42: As an additional element of the continuing action program, NIWA shall assess the need and/or feasibility of downstream desilting basins.

The following items shall be addressed in this assessment:

- The need for a downstream sedimentation basin(s) with all other programs being implemented and in place (e.g., grading ordinances, BMPs, in-channel sediment management).
- Identification of alternative sites for downstream sediment control basins. Sites A and B, identified in the Phase II subtask 5 report shall also be included as alternative sites.
- The effectiveness of each site in sediment removal at various flow rates
- The costs of construction and maintenance of each alternative site. These costs shall include not only the direct costs of construction and maintenance, but also the indirect costs to both the surrounding communities and private interests as a result of development of each site.

The financing of these studies shall be provided by additional state and federal 208 funding.

Since the proposed action is recommending the preparation of a study, no direct impacts will result. No alternatives were therefore considered.

Proposed Action 43: At the expiration of existing street-sweeping contracts, or as existing mechanical equipment is retired, each appropriate jurisdiction shall obtain vacuum or combination vacuum/mechanical street-sweeping equipment. The final mix of mechanical and vacuum equipment shall provide a balanced street cleaning program. The optimum mix of equipment shall be attained no later than eight years after specific guidelines are established in the 208 Plan for the use of various types of equipment in achieving water quality goals. The cost of this equipment will vary by jurisdiciton, depending on the amount of vacuum equipment needed and the equipment chosen. Each jurisdiction shall finance these costs through local funding sources.

Alternative Action 43a: No-action alternative.

This alternative would continue the status quo. The beneficial impacts described for the proposed action — mostly reduced street wasteloads and improved water quality — would not be realized.

Adverse impacts identified for the proposed action, mostly increased costs, would not occur. The commitment of local agencies in the Newport Bay watershed to reduction of wasteloads to the Bay and its restoration, were primary factors in the rejection of this alternative.

Other Alternatives Considered

During the development of the proposed action, alternative street-sweeping equipment, schedules and catch basin cleaning procedures were evaluated. Detailed studies were conducted by consultants to NIWA which provided the framework for the evaluation. The following reports are incorporated herein by reference as documentation of alternatives for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 209-38, October 1978.
2. Appendix, NIWA Task 2-1B Subtask 2 Report: Surface Sanitation Program, Newport-Irvine Waste Management Planning Agency, SCAG 208-38b, October 1978.

Proposed Action 44: Each jurisdiction shall modify existing street-sweeping practices to attain the greatest water quality benefit based on season, refuse collection day, tree trimming operations (e.g., slower sweeping speeds, double passes where needed). This action shall commence immediately upon adoption of the 208 Plan. Costs are expected to be minimal and shall be financed by the implementation jurisdictions.

Alternative Action 44a: No-action alternative.

This alternative would continue the status quo in the Newport Bay watershed. Beneficial impacts described for the proposed action (mostly reduced wasteloads to Newport Bay) would not be realized. Adverse impacts, mostly increased costs, would not occur. Street wasteloads would continue to be transported during rainy periods to Newport Bay with adverse water quality effects. The commitment of local agencies in the Newport Bay watershed to the restoration of the Bay was a primary factor in the rejection of this alternative.

Other Alternatives Considered

During the development of the proposed action, alternatives to existing street-sweeping programs, including modified schedules, were considered. Detailed studies were conducted by consultants to NIWA which provided the framework for the evaluation. The following reports are incorporated herein by reference as documentation of alternatives for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B Subtask 2 Report: Surface Sanitation Program, Newport-Irvine Waste Management Planning Agency, SCAG 208-38b. October 1978.

Proposed Action 45: **Each jurisdiction shall improve its streets within the NIWA area with curbs and gutters, where needed, to facilitate removal of significant street pollutants. Costs will vary by jurisdiction. Financing of these costs shall be provided through local funding sources or as a condition of development.**

Alternative Action 45a: No-action alternative.

This alternative would continue the status quo. Beneficial impacts described for the proposed action, mostly improved street wasteload removal and water quality enhancement in the Bay, would not be realized. Adverse impacts described for the proposed action, mostly increased costs and construction impacts, would not occur. The effectiveness of the street-sweeping programs of local agencies would not be improved. The commitment of local agencies in the Newport Bay watershed to the restoration of the Bay was the primary factor in the rejection of this alternative.

Other Alternatives Considered

During the development of the proposed action, alternative mechanisms for improving street-sweeping program effectiveness were considered. Detailed studies were conducted by consultants to NIWA which provided the framework for the evaluation. The following reports are incorporated herein by reference as documentation of alternatives for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B, Subtask 2 Report: Surface Sanitation Program, Newport-Irvine Waste Management Planning Agency, SCAG 208-38b, October 1978.

Proposed Action 46: **Each jurisdiction shall identify areas within the watershed which are recurringly used as illegal dump sites and increase enforcement of applicable regulations. Costs for this activity will vary by jurisdiction and will be provided through local funding sources.**

Alternative Action 46a: No-action alternative.

This alternative would continue the status quo. Illegal dumping activities would continue to occur in the watershed with adverse water quality effects. Beneficial impacts described for the proposed action, mostly water quality improvement and reduced public health risks, would not be realized. Adverse impacts, mostly increased costs, would not occur. The commitment of local agencies to the restoration of Newport Bay was the primary factor in the rejection of this alternative.

1. Integrated Control Plans – Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.

2. Appendix, NIWA Task 2-1B Subtask 4 Report: Vessel Waste Management, Newport-Irvine Waste Management Planning Agency, SCAG 208-38d, October 1978.

Proposed Action 49: The City of Newport and the County of Orange shall amend the existing maintenance agreement and increase its funding to provide for emergency cleanup of lower Newport Bay.

Alternative Action 49a: No-action alternative.

This alternative would continue the status quo. The low level of funding that presently exists in the maintenance agreement is not adequate for satisfactory cleanup of the lower Bay. Beneficial impacts described for the proposed action, mostly improved water quality, would not be realized. Adverse impacts, mostly increased costs, would not occur. The commitment of local agencies to cleanup and enhancement of the Bay, was the primary consideration in the rejection of this alternative.

Other Alternatives Considered

As the development of the proposed action progressed, other cleanup alternatives, including funding levels and agency responsibilities, were considered. Detailed studies were conducted by consultants to NIWA which provided the framework for the evaluation of alternatives. The following reports are incorporated herein by reference as documentation of alternatives for the proposed action:

1. Integrated Control Plans – Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.

2. Appendix, NIWA Task 2-1B Subtask 4 Report: Vessel Waste Management, Newport-Irvine Waste Management Planning Agency, SCAG 208-38d, October 1978.

Proposed Action 50: The Southern California Association of Governments shall develop and implement public education programs designed to reduce vessel-related pollution.

Alternative Action 50a: No-action alternative.

This alternative would continue the status quo. Public awareness regarding the impact of vessel-related pollution, would continue to be low and beneficial water quality impacts described for the proposed action would not be realized. Adverse impacts, mostly costs, would not occur. The commitment of local agencies to improvement in the quality of Newport Bay was a primary consideration in the rejection of this action.

Other Alternatives Considered

Alternative public awareness programs were considered during the development of the proposed action, including involvement by the Coast Guard Auxiliary. Studies were conducted by consultants to NIWA which provided the framework for the evaluation of alternatives. The following reports are incorporated herein by reference as documentation of alternatives for the proposed action:

Proposed Action 47: **The County of Orange shall enforce existing laws requiring marinas to have accessible sewage pump-out capability. This activity shall commence immediately upon adoption of the 208 Plan. Costs of the implementation are anticipated to be minimal and shall be financed by the County of Orange or its contractors.**

Alternative Action 47a: No-action alternative.

This alternative would continue the status quo. Dumping of sewage into the Bay from pleasure craft would continue. Beneficial impacts to water quality and public health described for the proposed action would not be realized. Adverse impacts, mostly increased costs, would not occur. The commitment of local agencies to the cleanup and restoration of the Bay was a primary factor in the rejection of this alternative.

Other Alternatives Considered

Alternatives to the proposed action, including locations of pump-out facilities, were considered. Detailed studies were prepared by consultants to NIWA which provided the framework for the evaluation of alternatives. The following reports are incorporated herein by reference as documentation for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.
2. Appendix, NIWA Task 2-1B Subtask 4 Report: Vessel Waste Management, Newport-Irvine Waste Management Planning Agency, SCAG 208-38d, October 1978.

Proposed Action 48: **The United States Environmental Protection Agency (EPA) shall support development of a device for in-the-water hull cleaning of pleasure craft which incorporates a retaining bag to collect the material removed. When these devices are made available and proven effective and economical, the California Regional Water Quality Control Board shall require their use for in-the-water hull cleaning. It is estimated that strict enforcement of these regulations will cost $15,000 (1978 dollars) per year, to be borne by the State of California.**

Alternative Action 48a: No-action alternative.

This action would continue the status quo in Newport Bay. In-the-water hull cleaning would continue with potentially adverse water quality impacts. Beneficial water quality impacts described for the proposed action would not be realized. Adverse impacts, mostly increased costs, would not be realized. The commitment of local agencies to the enhancement of water quality in the Bay was a primary factor in the rejection of this alternative.

Other Alternatives Considered

Other alternatives to continuing existing hull cleaning practices were considered during the development of the proposed action. Detailed studies were conducted by consultants to NIWA which provided the framework for the evaluation of alternatives. The following reports are incorporated herein by reference as documentations of alternatives for the proposed action:

1. Integrated Control Plans — Priority Program for Newport Bay, Newport-Irvine Waste Management Planning Agency, SCAG 208-38, October 1978.

2. Appendix, NIWA Task 2-1B Subtask 4 Report: Vessel Waste Management, Newport-Irvine Waste Management Planning Agency, SCAG 208-38d, October 1978.

Proposed Action 51: Working with the EPA, U.S. Coast Guard, State Water Resources Control Board, Orange County Sheriff and any other appropriate governments, NIWA shall define the duties and authorities of such entities to enforce existing state and local regulations in Newport Bay and to cooperatively develop an enforcement program. Such programs shall thereafter be available for use by the implementing and enforcing entities as well as for use in developing the public educational programs.

The proposed action involves definition of agency responsibilities and cooperative development of programs. Since there are no direct impacts from this action, alternatives were not considered.

INTEGRATED WATER QUALITY EVALUATION

Proposed Action 52: Determine the source(s) of bacterial contamination to Upper Newport Bay and develop appropriate mitigation measures.

Proposed Action 53: Determine the source(s) and impacts of the high nutrient levels entering Upper Newport Bay via San Diego Creek and, where needed, develop appropriate mitigation measures.

Proposed Action 54: Assess the impacts of pollutants entering Upper Newport Bay via storm drains and the Santa Ana-Delhi Channel and, where needed, develop appropriate mitigation measures.

Proposed Action 55: Task 2-3: Ongoing UCI continuing action study.

A. Water quality monitoring in the major channels shall be performed to determine the pollutant inputs to Upper Newport Bay.

B. An intensive water quality survey shall be performed to determine detailed information regarding runoff quality and quantity from major land use types.

C. A special sediment transport analysis shall be performed to determine the amount of sediment which is carried from the watershed into Upper Newport Bay.

The proposed actions involve the initiation or continuation of water quality studies. Since there are no direct impacts from these actions, alternatives were not considered.

SECTION VI

Persons and Organizations Contacted/ Bibliography

Persons and Organizations Contacted

PUBLIC ORGANIZATIONS

CALIFORNIA DEPARTMENT OF FISH AND GAME
- Ron Hein
- Perry Hergersell

CITY OF LOS ANGELES BUREAU OF ENGINEERING
- Fred Hoeptner
- John Perica
- George Snelling

CITY OF LOS ANGELES BUREAU OF SANITATION
- Roland Appel

LOS ANGELES COUNTY BUREAU OF ENGINEERING
- Brian Scanlon

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
- Jim Noyes

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY
- Bob Collacott
- Bob Rende

RIVERSIDE COUNTY FLOOD CONTROL DISTRICT
- Frank Pears

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
- Chuck Laird

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
- Richard Bell
- Al Herson
- Roger Riga
- Tom Smith

SOIL CONSERVATION SERVICE
Jim Earsome, San Bernardino
Bobby Gains, Lancaster
Don Miller, Riverside
Vic Smothers, Tustin

UNITED STATES ARMY CORPS OF ENGINEERS
Wyn Collings, Los Angeles

UNITED STATES SALINITY LABORATORY, RIVERSIDE
James D. Oster
J. D. Rhoades

UNIVERSITY OF CALIFORNIA, RIVERSIDE
John M. Rible, Cooperative Extension

PRIVATE ORGANIZATIONS

BOLT BERANEK AND NEWMAN INC.
Harry Seidman

LeROY CRANDALL AND ASSOCIATES
Alice Campbell

PIFER ENVIRONMENTAL SERVICES
Ronald J. Pifer

UNIVERSITY OF SOUTHERN CALIFORNIA
HARBORS ENVIRONMENTAL PROJECTS
Mikihinko Oguri
Dr. Dorothy Soule

Bibliography

Association of Bay Area Governments. *Draft Environmental Management Plan Vol. II.* Berkeley, California, December 1977.

California, State of. California Environmental Quality Act of 1970. Title 14, Division 6, California Administrative Code.

Daniel, Mann, Johnson, & Mendenhall. *Development of Areawide Policy Alternatives for Water Quality Management in the South Coast 208 Planning Area; Evaluation of Policy Alternatives.* Los Angeles, April 1978.

_____. *Preliminary Environmental Assessment of Six Growth Forecasts for the South Coast Planning Area.* Los Angeles, May 1978.

Dixon, Dr. Peter S. and Gordon A. Marsh. *Ecological Survey of Aquatic and Terrestrial Resources for the City of Newport Beach.* Newport Beach, California, July 1973.

Engineering–Science. *Progress Report, Task 2-9: Urban and Industrial Stormwater Needs, County of Orange.* Tustin, California, January 1978.

_____. *Task 2-8: Subregional Development of Residual Waste Control and Land Disposal Needs, County of Orange.* Tustin, California, March 1978.

Environmental Resources Group. *Task 2-1A: Subregional Development and Evaluation of Air Mitigation Measures.* Los Angeles, April 1978.

_____. *Task 2-7: Contingency Plans for Containment and Cleanup of Spills of Hazardous Substances.* Los Angeles, no date.

Gilbert, J. B. and Assoc. *Water Quality Control Investigation: Urban Runoff, Construction Activities, and Agricultural Practices.* Berkeley, California, August 1978.

King, L. D. *Task 2-9: Urban and Industrial Stormwater Systems Needs and Analysis.* March, 1978.

Los Angeles City. *Task 2-9: Urban and Industrial Stormwater System Needs.* Los Angeles, June 1978.

Los Angeles City Department of City Planning, Office of Environmental Quality. *Evaluation of the Feasibility of Mitigation Strategies for Secondary Impacts on Air Quality of the Wastewater Facilities Plan* (preliminary copy). Los Angeles, no date.

Los Angeles County AQMP Coordinating Committee. *Draft Report, Los Angeles Cities and County Air Quality Management Plan, Los Angeles County Subregion.* Los Angeles, March 1978.

Los Angeles County Department of County Engineer—Facilities, Civil Engineering Division. *Task 2-1D: Waste Treatment Management for the Malibu/Topanga Area.* Los Angeles, June 1978.

_____. *Task 2-8: Subregional Development of Residual Waste Control and Land Disposal Needs, Los Angeles County.* Los Angeles, March 1978.

Los Angeles City Fire Department. *Task 2-7: Contingency Plans for Containment and Cleanup of Spills of Hazardous Substances.* Los Angeles, April 1978.

Los Angeles County Flood Control District, Water Quality Section. *Task 2-7: Contingency Plans for Containment and Cleanup of Spills of Hazardous Substances in Los Angeles County.* South Gate, California, February 1978.

_____. *Draft Final Report, Task 2-9: Urban and Industrial Storm Water Needs in Los Angeles County.* South Gate, California, March 1978.

Montgomery, Jame M., Inc. Engineering Study of Stringfellow Class I Disposal Site. Pasadena, California, January 1977.

Newport-Irvine Waste Management Planning Agency. *Final Report, NIWA 208 Draft Plan Element.* Newport Beach, California, September 1978.

Orange County Harbors, Beaches, and Parks District. *Silt Removal—Upper Newport Bay.* Newport Beach, California, November 1973.

Pomeroy, Johnston, and Bailey. *Task 2-1B: Design and Evaluation of Candidate Management Strategies – Newport Bay; Subtask 1: Further Habitat Restoration and Dredging Operations.* Pasadena, California, May 1978.

_____. *Task 2-1B: Design and Evaluation of Candidate Management Strategies—Newport Bay; Subtask 3—Erosion and Grading Controls.* Pasadena, California, May 1978.

_____. *Task 2-1B: Design and Evaluation of Candidate Management Strategies—Newport Bay; Subtask 5: San Diego Creek Watershed Sediment Management Plan.* Pasadena, California, May 1978.

Redfield, A.C. "Development of a New England Salt Marsh." Ecological Monograph 42:201-237, 1972.

Riverside County Planning Department. *Urban and Industrial Stormwater Needs Study, Riverside County 208 Program.* Riverside, California, February 1978.

_____. *Task 2-7: Assessment of Contingency Plans for Cleanup and Containment of Spills of Hazardous Substances.* Riverside, California, February 1978.

Riverside County Planning Department. *Riverside County Subregional Air Quality Management Plan.* Riverside, California, July 1978.

San Bernardino County. *Task 2-1A: Subregional Development and Evaluation of Air Mitigation Measures.*

San Bernardino County Environmental Health Services Department. *Task 2-7: Contingency Plans for Cleanup and Containment of Hazardous Substances.* San Bernardino, California, June 1978.

_____. *Task 2-8: Draft Final Report, Subregional Development of Residual Waste Control and Land Disposal Needs, San Bernardino County.* San Bernardino, California, June 1978.

South Coast Air Quality Management District. *Draft Air Quality Management Plan.* El Monte, California, August 1978.

Southern California Association of Governments. *208-21 Milestone Report.* Los Angeles, November 1977.

_____. *Draft Report, Areawide Policy Alternatives for Water Quality Management.* Los Angeles, May 1978.

Tetra Tech, Inc. *Draft Report, Task 2-1B: Design and Evaluation of Candidate Management Strategies: Newport Bay; Subtask 2: Surface Sanitation Program.* Pasadena, California, March 1978.

_____. *Task 2-B: Design and Evaluation of Candidate Management Strategies: Newport Bay; Subtask 4: Vessel Waste Management.* Pasadena, California, April 1978.

U.S. Environmental Protection Agency. *A Review of Environmental Impact Assessment Methodologies.* Washington, D.C., April 1974.

_____. *Manual for Preparation of Environmental Impact Statements for Wastewater Treatment Works, Facilities Plans, and 208 Areawide Waste Treatment Management Plans.* Washington, D.C., July 1974.

_____. *Planning Methodologies for Analysis of Land Use/Water Quality Relationships.* Washington, D.C., October 1976.

_____. *Land Use – Water Quality Relationship.* Washington, D.C., October 1976.

_____. *Guidelines for State and Areawide Water Quality Management Program Development.* Washington, D.C., November 1976.

_____. *Environmental Assessment of Water Quality Management Plans.* Washington, D.C., January 1977.

U.S. Government. *Federal Water Pollution Control Act Amendments of 1972.* Public Law 92-500, Section 502, October 1972.

_____. *National Environmental Policy Act of 1969.* Public Law 91-190, 42 USC.

U.C. BERKELEY LIBRARIES
C12489691